The Builder.

VOL. LXXVI. No. 2939. JUNE 3, 1899.

ILLUSTRATIONS.

Decoration of Ceiling and Proscenium, New Palace Theatre, Plymouth.—By Mr. H. C. Brewer ..... *Double-Page Ink-Photo.*
Institution of Mechanical Engineers.—Mr. Basil Slade, Architect ..... *Two Single-Page Ink-Photos.*
Finsbury Pupil Teachers' Centre, Offord-road, N.—Mr. T. J. Bailey, F.R.I.B.A., Architect ..... *Single-Page Ink-Photo.*
An Old Folks' Home, Hitchin.—Mr. Walter Millard, A.R.I.B.A., Architect ..... *Single-Page Ink-Photo.*
Village Post Office, Broadway, Worcestershire.—Messrs. E. Guy Dawber and Whitwell, Architects ..... *Single-Page Photo-Litho.*
Second Premiated Design for Royal Institution, Liverpool.—By Mr. R. W. Bedingfield, A.R.I.B.A. ..... *Single-Page Photo-Litho.*

Blocks in Text.

Silchester, Hampshire: Some of the Discoveries made in 1898 .. Page 544
Arabesque Decoration, Princes Restaurant.—By Mr. H. C. Brewer ..... „ 547
Illustrations to Student's Column ..... Page 551
Institution of Mechanical Engineers. Plans ..... Page 548
Finsbury Pupil Teachers' Centre. Plan ..... „ 548
Design for Liverpool Royal Institution. Plan ..... „ 549

CONTENTS.

A Book on Westminster Abbey 535
Notes 537
The Royal Institute of British Architects 539
The Surveyors' Institution 541
The Dispute in the Building Trade 542
The Architectural Association Discussion Section 543
Architectural Societies 543
Competitions 543
Excavations at Silchester 544
The Architectural Association 545
Applications Under the London Building Act, 1894 546
Arabesque Decoration 547
Illustrations:—
Decorations of the New Palace Theatre, Plymouth 547
The Institution of Mechanical Engineers 548
Finsbury Pupil Teachers' Centre 548
An Old Folks' Home, Hitchin, Herts 548
New Post Office, Broadway, Worcestershire 548
Competition Design for Royal Institution, Liverpool 548
Books Received 549
The Student's Column. Architectural Hygiene.—XX 549
Obituary 552
General Building News 552
Sanitary and Engineering News 554
Stained Glass and Decoration 554
Foreign 554
Miscellaneous 554
Capital and Labour 555
Legal:—
The Workmen's Compensation Act 555
Meetings 556
Recent Patents 556
Prices Current of Materials 556
Some Recent Sales of Property 557
Competitions, Contracts, and Public Appointments 558
Tenders 559

A Book on Westminster Abbey.

WESTMINSTER ABBEY has acquired such an exceptional position as the historical shrine of the nation, that comprehensiveness has come to be regarded as its special characteristic. We wish that this, the latest of works upon the subject,* had shared in that quality, for there is room for a treatment of the Abbey as a whole up to the present day, without any slurring over or omission of all that has been done since the sixteenth century. Incongruous as many of the additions of a later date have been, they are in the main *bonâ-fide* representations of the art, and often of the very best available, of each subsequent generation, and as far as the monuments are concerned there are among them works which would command admiration in another position. There is no standpoint from which the Abbey can be properly regarded as the product of even one century, and it becomes hardly possible to logically condemn the eighteenth century sculptor for cutting away the arcading of Henry III. when we find the latter's architects clearing away the old church of the Confessor. It is wiser to accept this great deposit of history as it stands, and let it be a temple of silence and reconciliation for the clashing standards of taste as well as of policies and creeds.

The backbone of the present book consists in a fine collection of photographs by Messrs. Bolas, of the buildings and monuments, seventy-five in all, with two diagram plans and two sections by Mr. Micklethwaite, to illustrate the successive dates of the building. The text consists of three sections: historical, by Mr. Henry J. Feasey (sixty-two pages); architectural, by Mr. Micklethwaite (twenty-seven pages); and a third on the mediæval monuments by Mr. Edward Bell (thirteen pages). A certain unavoidable want of unity results from the separation of the two first sections; the reader has an uneasy feeling that one account may not exactly bear out the other in regard to dates, while a certain amount of repetition is inevitable. In reality, two different classes of readers may be said to be catered for, and Mr. Feasey, addressing the more popular audience, glides rapidly over the historical part, especially after the mediæval period, one half-page taking us from the Henry VIII. to the Diamond Jubilee, in a concluding paragraph that closes too rapidly the long perspective of the Abbey as one of the centres of English life. In dealing with the dissolution of the Abbey the writer launches out into a eulogy of the monks that gives rise to the supposition that the order of St. Benedict suffered for the sins of others, otherwise it is difficult to understand how the extinction of so valuable a community was acquiesced in by the nation.

Mr. Micklethwaite is more philosophical, and scientifically traces out the gradual alteration in the habits of the monks from common to individual living, the change exercising a marked influence on their architectural surroundings. After pointing to the Roman country house as the derivative of monastic buildings, he says:—

"The essence of the monastic plan, as was that of the villa, is the square enclosed court with portico round, which formed at once the general living place and the approach to the various apartments arranged round it."

While he looks on the chapter-house as the successor of the Tablinum.

The many religious houses founded in England during the twelfth century met, he tells us, a real want.

"They were crowded with monks more quickly than they could be built. But this did not last long. After the middle of the fourteenth century there were scarcely monks enough to occupy the buildings; and at the suppression in the sixteenth we find but twenty or thirty in a house built for the accommodation of hundreds. With the decrease of numbers came an increase in the importance of the individual monk—he became a dignitary, and his abbot a prelate. The life of a Benedictine in the fifteenth century was more that of a canon than that of a monk, according to the ideas of earlier times, and the resemblance was increased by all monks receiving holy orders, which had not been the ancient custom. The essence of the Benedictine rule was the common life, but at last this was quite lost in some places. As early as the twelfth century the abbots of the greater Benedictine abbeys lived apart in their own houses, and had their separate property, as indeed their position as great secular lords compelled them to do. Then other officers, in gradually increasing numbers, had their separate apartments, and the custom which there was of assigning money to special offices put money into their hands, any balance of which, after the calls of their office had been met, seems to have been at their own disposal. Then we find ordinary monks receiving pensions out of the common property, and owning money and goods, some of them being rich men who are recorded as benefactors of their own churches. From this to the provision of a separate dwelling for each man is not far, and it was certainly reached in France in the seventeenth century. I cannot positively say that it was in England in the sixteenth, but I much suspect that it was at Westminster, where there were many private apartments, some of them being complete houses."

The provision of private apartments began with the Infirmary, which was a place not only for the sick but for all those who through old age or for other causes were not able to take their part in the duties of church and cloister; and the readiness with which some of the monks found excuses for residing in the Infirmary was a subject of contemporary satire. At Westminster the Infirmary was done away with altogether, and its place taken by a number of separate houses ranged round a cloistered court.

"A like change seems to have been made in the dorter. Originally it was a long open gallery, in which the beds were arranged in rows. Then the cubicles became chambers, and at Westminster and some other places a number of houses and chambers were crowded round wherever there was space outside the dorter, with doors from it to satisfy that clause of St. Benedict's rule which says that a monk must always sleep in the common dorter."

Mr. Micklethwaite points out the traces of

* "Westminster Abbey Historically Described." By Henry John Feasey. With an account of the Abbey Buildings by J. T. Micklethwaite, V.P.S.A., Architect to the Dean and Chapter. An Appendix on the Mediæval Monuments by Edward Bell, M.A., F.S.A. And seventy-five plates. London: George Bell & Sons, 1899.

these alterations at Westminster, and regrets the destruction of blocks of chambers to which he ascribes an earlier date than had been hitherto given to them.

The prominence given in this work to the monastic buildings emphasises what we are apt to overlook in the present day pre-eminence of the church itself—namely, that the latter was, after all, only the leading apartment in a group of buildings devoted to a special purpose, and that in a sense, in early times at any rate, the focus of the life of the community was to be found in the cloister.

"The building of an abbey, though laid down from the first on a regular plan, often took many years. . . . . The ordinary course seems to have been that on settling in any spot the monks made use of any shelter they could get, and then cleared the ground and set out their future house as they hoped to build it, and put up temporary wooden buildings in the places of the permanent ones, which where then built quickly or slowly, according to the means of the house or the generosity of its benefactors. . . . ."

The further progress of the house may be summarised as follows:—The church came first, generally the eastern half only, to accommodate the services; then the cloister and the "regular" buildings round it. If the nave of the church was not finished, enough of its wall next the cloister was built to allow of the completion of that walk, usually the north. Next came the east side, with the chapter-house and monks' cloister. If the nave of the church had not been finished before, it was generally gone on with after the completion of the square of the cloister. Then the Infirmary was built towards the east, and last the buildings and the outer court towards the west, guest houses, workshops, stables, and the like, many of which remained wooden buildings at the Suppression. Bearing in mind these general lines, the historical development of the Abbey can be traced out with real interest and profit, because we see the architects of those ages proceeding on lines of natural growth and governed by the necessities of providing accommodation varying with each generation, hampered by the same restrictions of older buildings, continuous occupation, and want of funds, such as we know so well in our present day practice. Thus the history of the Abbey becomes no longer a matter of dry dates and dead royalties, but the solution of a series of interesting problems in an artistic manner.

Looking first at the site, Mr. Feasey endeavours to give us a picturesque account of the spot on which the Abbey was founded, the exact facts of which are difficult to distinguish from fiction. As with so many great buildings, the existing one is but a link in a long chain of occupants of a site marked out by some natural advantages from the first. As with St. Paul's, we have the tradition of a heathen temple preceding the church; while the mythical consecration by St. Peter, 610 A.D., is told at length and ascribed to the thirteenth century. Coming to actual facts, we have a genuine charter of 785 A.D., by Offa, King of Mercia, who had founded St. Albans in the preceding year. Mr. Feasey regards it as tolerably certain that King Edgar (958-975) and St. Dunstan, by bringing twelve monks, probably from the Benedictine Monastery of Glastonbury, and planting them at Westminster, practically founded the Abbey, although down to the time of the Confessor it does not appear to have been in anything like a flourishing state. This may be ascribed in part to the Danish rule of twenty-eight years, which ended in 1042, when Edward the Confessor came to the throne.

"There are foundations under the turf of the north green some of which may belong to the earlier Saxon abbey, but there is nothing of which we can be sure, and we do not know even whether its buildings were of stone or wood."

The Confessor took up his abode close by, building a palace, the remains of which existed up to the Great Fire of 1835. He then turned his attention to the building of the Abbey. Mr. Feasey considers it probable that the Abbey had a twofold character, namely, that of Royal chapel attached to the new palace, and that of church of the ancient Benedictine monastery, the pious inclinations of the King marking it out as his prospective burial-place. The unique character of the building was thus early determined, while it is singular that the last characteristic, that of a great burial-place, should have come with time to predominate over the two former.

The Confessor's buildings are described as in a mode of construction then a novelty in England, *i.e.*, in the Norman style; the older Romanesque, of which a few nearly complete examples still exist, as at Bradford-on-Avon, Worth, and Escombe in Durham, having been hitherto the fashion of all English churches. Nothing now remains of this Norman church save the remnant of one of the choir piers on the north side (which can be seen by raising a square trap in the floor of the sacrarium), and a doorway high up on the southern face of the transept, together with some portions of the monastic buildings. The church as then built was cruciform in plan, comparatively low in height, its eastern portion terminating in a semicircular apse. It also appears to have had a massive central tower, with a couple of towers at the west end.

There are two descriptions of the church, the earlier written immediately after the death of Edward, when his work was scarcely finished, and the other about 1245, when the work of rebuilding was already begun. Both are printed in Dr. Luard's volume of "Lives of Edward the Confessor" in the Rolls series.

The earlier one was addressed to Queen Emma, and is described as certainly not later than 1074, when she died. Mr. Micklethwaite remarks that the passage is full of difficulties, as to the obscurity of an uncertain text and an inflated literary style must be added the writer's ignorance of the terms of building. His rendering of the passage is as follows:—

"The main building is rounded, and built with very high and uniform arches of ashlar work. And the aisle enclosing that part is strongly vaulted with a double arch of stone springing from either side right and left. Then the cross of the church, which is contrived to go over the middle of the choir of the singers of the Lord, and by its double abutment on one side and on the other to support the lofty top of the central tower, starts first with a low and strong arch, then spreads out with many winding stairs, artfully going up, and is continued with plain walling up to the wooden roof, which is well covered with lead. Below and above, chapels are put out to be consecrated by their altars to the memories of apostles, martyrs, confessors and virgins. All this vast and complicated work was placed far enough eastwards of the old church for the brethren using it not to be interrupted in service of Christ, and also that there might be a sufficiently spacious approach between them."

Sir Gilbert Scott thought the description to mean that the aisles were vaulted at two levels—that is, above the triforium as well as above the ground story. Our author thinks that it is only an involved attempt to describe a vault by a writer used to arches only. The Bayeux tapestry picture is regarded as uncertain, but it is pointed out that the four angle turrets of the central tower are made very conspicuous, while the lower turrets shown may be those at the outer angles of the transepts. Chapels in two stories opening off the triforium exist at Gloucester; the description implies that they had not yet been consecrated.

"The new work was built eastwards of the older Saxon church, which continued in use by the monks during the building; and afterwards it seems that they were joined by what is called a spacious intervening vestibule, so that the old became the nave, and the new the choir of one church."

More than this, Mr. Micklethwaite maintains, cannot have been done by the Confessor.

Whether while the choir was in building other works were begun by the Confessor is uncertain. There is early Norman work all through the building on the eastern and northern sides of the cloister, and it has usually been attributed to him. Mr. Micklethwaite argues that as he left the Abbey well endowed, the work need not have stopped at his death, and that it is likely that the choir was first of all got ready, and then that the other buildings were gone on with. The next step was to take down the old Saxon church, and to build a nave corresponding to the Confessor's choir. This had western towers, and Mr. Micklethwaite throws out the interesting idea that the peculiar form of the lower part of the present towers, which many students must have noted, may be due to inheritance from their predecessors, and even that some of the older work may be hidden beneath the present casing. The building of the nave was a great work, and probably took many years. It seems to have been finished about 1150. A space of seventy years brings us to the laying of the foundation-stone of the old Lady Chapel by Henry III. when a boy of thirteen. This was the work of the Abbey aided by the subscriptions of the outsiders, to whom Abbot Humez granted an indulgence. It was of the newer fashion, and for 200 years stood as part of the rebuilt church, but its plan and form were ruled by the old to which it joined on. The old Lady Chapel ended in a three-sided apse, the foundations of which have been found close to the great piers at the east end of the present chapel, which, leaving out the aisles and secondary chapels, agrees with it in plan. It is argued that the apse of the Confessor's church and the aisles round it, from which the Lady Chapel was entered, must have been near where the later ones are.

The rebuilding extended over twenty-four years, 1245–1269, according to Sir G. Scott. Mr. Micklethwaite is inclined to reduce the period, as the new chapter house was in use in 1253, and he considers that its four-light windows show an advance in style on the church, implying a rather later date. He believes that the north transept was the first part begun, and that the work there was kept well in advance on the south side, where the chapter house is.

Beginning with the north transept would cause less inconvenience to the daily life of the monks and in the use of the old church Mr. Micklethwaite considers that evidence is to be found of this in the triforium arcade,

as all round the presbytery and the south transept the outer order of the arches varies in detail in a regular succession which had not been fixed when the north transept was built. Some of the caps also in the latter are carved, while all elsewhere in the triforium are moulded. Some special photographs illustrate this point. In 1261 the work up to that time was reckoned to have cost 29,345*l.* 19s. 8d. in the money of the time—equal to half a million now. We are given an interesting glimpse of how the funds were raised for church building in those days.

"The enormous exactions by Henry III. have left their lasting traces on the English Constitution in the institution of the House of Commons, which rose into existence in consequence of the king's lavish expenditure on the Abbey."

Exactions from the Jews, from wealthy City burghers who would be barons, and the holding of compulsory fairs to the detriment of other markets, formed fruitful resources.

"The new work was limited to the east of the already existing Lady Chapel, which was retained; the position of the transept was fixed in its place by the square of the cloister. The width of the main building was ruled by that of the Norman choir, to which the new work was joined on, and this with the cloister fixed the width of the aisles.

Nevertheless the new building was larger in all possible directions than the old one. A ring of chapels was added round the east end. The transepts are longer and have aisles on both sides, the west on the south being carried over the cloister in a way which, I believe, is unique, because it might not cut into it. The new work rose above the old by, it would seem, the whole height of the clearstory.

This work extended from the Lady Chapel on the east to the bay beyond the crossing on the west, thus covering the western aisles of the transepts. But the last bay was carried up only to the height of the old work; that is, that of the ground story and triforium of the new. The clearstory window on each side there has, as Sir G. Scott pointed out, the eastern jamb of this period and the western of the next. Temporary buttresses were no doubt put to support the great arches of the crossing until the clearstory was continued.

Outside the church this work included the chapter house before mentioned, which was certainly built on a new site, the revestry, so much of the cloister as lay within the south transept, and its east wall to beyond the chapter house door.

The next work was the rebuilding of that part of the western arm of the church which belongs to the choir, and one bay more in the ground story and triforium. The corresponding bays of the north walls of the cloister were rebuilt at the same time."

This portion has always been attributed to Edward I., but our author believes it is due to his father, and argues that, "while it was a distinct work, there was no interval." It shows only such slight alterations as might be made in the course of the work. "The plan of the pillars was improved, bronze bands were used to the shafts instead of marble, and a better treatment of the spandrels of the wall arcade was introduced, but the general feeling of the work is the same." It seems most likely that the first work was finished, or nearly so, in 1261, and that the choir as far west as the pulpit, or a little beyond, was built between that date and 1269, when the monks first sang the service in the new church on October 13. The nave was still of the twelfth century, one bay between being new up to the height of the old work, the clearstory jambs being left as before.

The story of the rebuilding of the nave is difficult to read, because, though it was spread over so many years, the design once laid down was kept to and the details not changed. "The design," says Mr. Micklethwaite, "is that of Henry III. work continued, and the details seem to me to belong rather to the fourteenth century than to the fifteenth. As early as 1342 we find a good deal of work going on in the nave. It is called 'new work in the old church,' and the account includes for whitewashing the walls." Mr. Micklethwaite thinks that at this time the intention was to modernise the old church, as at Norwich and Peterborough about this time, and he points out that most of the items seem to refer to windows. It is not, however, he says, until 1388 that we find any account for the pulling down of the old work. From that time the work seems to have gone on steadily but slowly all through the reign of Richard II. He is described as having erected a wooden porch to protect the delicate stonework of the north transept front, the entrances known as Solomon's Porch. "It was gorgeously decorated within, the walls covered with paintings, and three large pointed windows rose above its elaborate central door, beyond which the wooden porch projected 17 feet." This reads as a delightfully mediæval erection, such as Burges alone of modern mediævalists would have done justice to.

The nave was scarcely finished before the thirteenth-century Lady Chapel was pulled down to make way for the new Lady Chapel of Henry VII.—begun 1503 and finished 1519.

"Meanwhile, changes had been going on in the other buildings of the Abbey which must have greatly altered the appearance of the place, owing to the provision of private apartments and even complete houses for individual monks. The work was chiefly of timber, and within this century much of it has been destroyed."

The work which was evidently addition to the stone buildings was, Mr. Micklethwaite believes, thought by most to be later than the Suppression in date, as indeed some of it was; but a good deal was older. There would be enough chambers to give his own apartment to every monk, for they were in the later years of the Abbey only about thirty in number.

It is significant that by some of these alterations the light was taken away from the older monks' parlour, from which it may be inferred that by that time the use of the parlour as the ante-room to the cloister, beyond which strangers who had business with any of the monks might not go, was no longer cared for, as

"the common privacy of the cloister had given place to the individual privacy of each monk in his chamber or study."

Mr. Feasey gives us particulars of the subsequent history of the church.

In January, 1539-40, the Abbey was surrendered by Abbot Boston, who was made the first Dean, it being a cathedral until 1550. The revenue at that time was about 80,000*l.* of our money.

In 1556 it was refounded by Queen Mary, John de Feckenham being installed as abbot with thirteen monks. He restored the shrine of the Confessor, with the cornice and curious wooden top, which it still possesses. Three years later came the final Dissolution.

"Although the early years of the sixteenth century saw the completion of the west front and central door, the two towers remained at about one half of their present height, without a gable to the front, until the time when the western façade was completed under the superintendence of Sir Christopher Wren, as may be seen in Hollar's views. Early in the eighteenth century Wren made drawings for the completion of the towers. His offer was accepted, and the work was brought to a conclusion about 1740."

In regard to the latter, Mr. Blomfield in his "History of the Renaissance in England," says that Hawksmoor succeeded Wren as Surveyor to the Abbey in 1723, so that probably no more than the successful general outlines of the towers is to be ascribed to Wren, and the grotesque detail must be due to the pupil. We could wish, however, that Wren's design for the central spire on the lantern at the crossing, which he began, had been given, as it is somewhat a rare print; also it would have been interesting to have had the question of the responsibility for the cutting back of the old masonry of the exterior of the church into curious semi-Gothic detail cleared up. It is part of the partial treatment of the book that Cottingham, to whose zeal Sir G. Scott pays a tribute, receives no mention, though his publication of Henry VII.'s Chapel is one of the most laborious, and, according to his light, thorough of architectural books. Blore, who is responsible for the pierced parapet of the Abbey, is also ignored, and while there is a reference to Sir G. Scott's "fostering care" we do not think he would have liked it to be said that he *rebuilt* the chapter house. In regard to the latter, Mr. Waterhouse, in an Academy lecture on the Abbey, drew attention to the scrupulous care of his restoration in this instance, as when he sacrificed his own design on the discovery of evidence of the old in the course of the work. As to the careful and artistic work of Mr. Pearson, it is referred to barely at all, and then also as rebuilding. We shall have to wait for his life, probably, to give us details, such as Scott's autobiography gives us, of his interesting and important work. The recovery by him of such a feature as the shaft respond of the flying buttresses at the east end, a feature common in France, is one well known point of his valuable work.

We have left ourselves no space in which to deal adequately with Mr. Bell's section on the monuments. It must suffice to say that a fine collection of the earlier monuments are given, one or two Elizabethan ones appearing more or less by chance, for, as we have already said, the scope of this section is too limited. Mr. Bell has drawn on Sir G. Scott and Burges for his clear and interesting notes on the varied monuments, commencing with the shrine of Edward the Confessor and ending with the tomb of Sir Francis Vere.

NOTES.

Hellenic Society.

AT the meeting of the Hellenic Society on Thursday, the 25th ult., Professor Gardner read a very interesting paper on the subject of scenic painting in the Greek Theatre. Without entering into the arguments on the vexed question as to whether the principal actors in the Greek drama acted their parts on a stage or in the orchestra, he said that he should assume the theory that the raised stage had a real existence and was the place for the actors, and that there was a painted scene in the rear of the stage. References to scene-painting and scene-painters in Greek literature left no doubt that there was such an art, but it must not be supposed that it had any relation to the realistic representation of a scenic background, such as we are accustomed to see

in the modern theatre. There was no evidence that the Greeks had any such feeling for the beauty or sentiment of natural scenery as exists in our own day. In art, at all events, the human interest was everything to them. In vase-paintings there was never any such thing as an attempt at the actual representation of a landscape or other surroundings of the figures; there were only symbolical indications; a column indicated a temple, a ragged line indicated a rocky ground, a series of waved lines was a symbol of the sea, and a single branch or spray of conventional foliage was taken to indicate a grove. The actual work of the scene-painter in the Greek theatre would probably be, in the first place, the representation of the architectural background. The back of the scene was always a building, with three doors by which the actors entered. Part of the business of the scene-painter would be to paint the columns and other details in a wooden erection into the semblance of a complete architectural screen. In addition to this, the *periakti*, or turning screens at each extremity of the stage, would probably be painted with symbols indicating the nature of the locality, such as we see on vases, and which would be accepted by the audience as sufficient indications of locality. A tower painted on the face of the *periaktos* might indicate a town, and if the action were changed to the seaside, a turn of the *periaktos* would reveal a dolphin or some other symbol of the sea as an indication of the change of scene. Further than this he did not believe that Greek scene-painting ever went.

Romsey Abbey.

IT is rather with regret than surprise that one hears that repairs are seriously needed to keep the grand Norman church of Romsey Abbey in a state of security. The most pressing matter is said to be the repair of the roofs of the South Chancel aisle and the South Chantrey, which were inefficiently restored two or three centuries ago, and are now in a very bad state. Nothing in the way of "restoration" in the usual sense of the word is contemplated—only such work as is necessary to keep the building in repair; but the construction of the new roof will enable the triforium arches on the south side of the chancel to be opened; and if it is possible to provide funds subsequently for repairing the roofs of the north and south aisles, this will facilitate also the opening of the triforinm arcading in the nave. The work is under the superintendence of Mr. Lewis Karslake, architect.

York Minster.

THE announcement that a sum of fifty thousand pounds is required for repair and restoration to York Minster, and among other things that the carved finials, pinnacles, and crockets which must be restored are "in number and delicacy overwhelming," sounds rather alarming, even though the work is to be under the conservative care of Mr. Bodley. If pinnacles and finials are in a dangerous state, and liable to come down, of course they must be renewed. But if there are cases where they are merely weatherworn and the carving wholly or partially obliterated, surely it would be better for the present to leave them as they are. The worn work is of more value than a new imitation.

The Plasterers' Strike.

As will be seen from our report in another column, the meeting of the representatives of the Master Builders' Association and the National Association of Operative Plasterers, which took place on Tuesday last, has resulted in the adoption of an agreement on both sides which appears in itself to be satisfactory, if only the Plasterers' Association will abide by it. Their action in the past does not, unfortunately, lead one to have much faith in their promises for the future; and it may be observed that in undertaking to discontinue the boycotting and blacklisting of builders' firms against whom they had complaints, the plasterers refused to admit the accuracy of the allegations on the subject, the evidence for which is in fact absolutely irrefutable.

Architectural Education for Women.

IT is announced that at the Paris Ecole des Beaux-Arts it is intended to open, but not till next year, three special ateliers for women —for painting, sculpture, and architecture respectively. Up to the present time only one lady pupil has entered her name as an intending student in architecture, but it is expected that the opening of the new atelier will soon attract others.

Railway Stations.

As we are now nearing the time of year when what is called the travelling public is moving about on the railways, it is desirable again to draw attention to the need of better indications at railway stations of the different offices, platforms, &c. Every office and platform should be indicated by large bold letters. If this were done the porters would be saved much time and trouble and travellers many inconveniences. On the Great Northern Railway the telegraph offices are now indicated clearly by large letters, and there is also much improvement in the way in which the names of the stations are shown. But, speaking generally, those in authority over English railways are singularly wanting in appreciation of the need of indications at railway stations, where the name of the station is often nearly lost amid a crowd of advertisements of a much more prominent character.

India-rubber in Electric Cables.

A PAPER by Mr. Terry in last week's *Electrican* calls attention to the decay of vulcanised rubber when used for insulating electric light mains. About ten years ago it was practically universally used, and electricians had very little misgiving about its enduring qualities. The age test, however, has told severely against its use in copper mains. The numerous failures of cables insulated with vulcanised rubber must be attributed to the deterioration of the rubber itself. Chemists have shown that the purer the india-rubber the longer its life. In addition, if the vulcanising process has been rapidly done, there is a large percentage of free sulphur in the product, which, in the presence of copper, accelerates the decay. Engineers usually talk as if the tinning of the copper wire were done in order to prevent the wire being eaten away by chemical or electrolytic actions. Manufacturers, on the other hand, recognise it as useful in protecting the rubber from the action of the copper, and thus increasing its life. Samples of decayed rubber taken from electric light mains often show traces of salts of copper, and there is no doubt that this has hastened the decay. The exact chemical action that takes place is obscure but whenever copper is present decay has begun. The symptoms of decay are familiar to all who have to do with electric light or bell wires. The rubber becomes hard and brittle and loses its elasticity. In the final stage of the oxidation it can even be ground into a powder with a pestle and mortar. Of course there are other agencies besides copper which accelerate its decay—heat, grease, light and air, and the sulphuric acid formed by the action of the latter on the free sulphur in the rubber. No wonder that many engineers prefer cables insulated with such chemically inert substances as asphaltum or paper.

The Grafton Gallery.

THE exhibition at the Grafton Gallery, held under the auspices of *L'Art Nouveau*, consists mainly of glass by Mr. Louis C. Tiffany and bronzes by M. Meunier. The Tiffany exhibition includes some very interesting specimens of stained glass; one in imitation or emulation of a Chartres window of the twelfth century, is noteworthy for its rich jewelled effect. Some of the windows exhibited are, however, far too pictorial in style. The collection of coloured and irridescent glass ware is a very fine one, and well worth attention; among objects of special interest to architects may be mentioned the electric hanging lamp for a library table, in metal and leaded glass (in one of the small rooms or lobbies opening out of the large gallery). The case of jewellery designed for *L'Art Nouveau* M. E. Colonna, in the centre of the large room, is clever but unfortunately too clever—the French artists do not seem to be able, in this class of art, to get rid of the element of *chic* which so vulgarises many things made in Paris, and the forms look as if eccentricity, rather than beauty and simplicity, was the aim of the designer. The most important element in the exhibition is to be found in the collection of bronze sculpture of figures in rustic or artisan life, by M. Meunier, who may be said to be a kind of Millet translated into bronze. The figures, mostly to a small scale, are characterised by great truthfulness and force in the delineation of workers of different orders, in the dresses and attitudes proper to their craft. There is little beauty in Meunier's work, as beauty is ordinarily understood, but there is sincerity and power of modelling and expression which give it a high interest. In our opinion the artistic value of this class of realistic work is overestimated at present; there is a kind of run on peasant and artisan subjects just now—a re-action in art—which will not be permanent, and which by some artists is taken up as a mere fashion; but there can be no doubt, at all events, of M. Meunier's sincerity, which shows itself throughout his work.

The Knightsbridge Exhibition.

THE Exhibition of the "International Society of Sculptors, Painters, and Gravers" (there is nothing like a high-sounding title) at the Knightsbridge Gallery may be characterised as a collection of large sketches and studies for pictures (some of them painted in dirt rather than in colour), relieved on the one hand by a few works of really fine character, and on the other hand by absurdities and caricatures for which the

only appropriate criticism is the insertion of a "!!!" in the margin of one's catalogue. Among the principal redeeming points are some of the portraits. Mr. R. Brough's "Miss Ogston" (47), somewhat tame in colour, has a fine spirit and movement about it, and Mr. Lavery's "A Lady in Pink" (90), though very sketchy (we fancy a finished painting would not be admitted), has real distinction in style and expression. There is character and originality in Mr. Alexander Mann's "Portrait of a Lady" (104) leaning back in her chair with a fashion-plate magazine in her hand; character too in Mr. Guthrie's "Mrs. Edward Martin" (98). Mr. E. A. Walton's life-size sketch, "The Sundial" (57), has the makings of a fine picture, both in colour and design. Among landscapes, a very clever one with considerable originality of style is "Calma Crepuscolare" (227) by an Italian artist, Signor Fragiacomo (*quasi* "Fra Giacomo": it looks like a coined name). The best of the other landscapes are among the smaller ones, such as Mr. Padgett's "Evening in Holland" (185), Herr Zügel's "Sunlight" (207*a*), which justifies its title; a good architectural picture of the Cá d'Oro, by Mr. W. P. Whyte, and an interior sketch on a large scale by Mr. H. Wilson, in his usual style. There is also a landscape by Mr. H. W. B. Davis, who looks out of place in such a collection, nor is this a work of his best. Among the small collection of sculpture are works bearing good names, but not realising much—in fact, like the pictures, they seem mostly sketches or studies; M. Dillen's nude kneeling figure, "La Mélancolie," is an exception. A special room entitled "the white room," is set apart for the hanging, in the middle of an expanse of blank wall of a few scrawly etchings by Mr. Whistler (the President of the Society), too precious to be mixed with the profaner works.

Drawings of the Riviera.

A COLLECTION of water-colour drawings "Illustrating a Season on the Riviera," by Mr. Arthur Burrington, is on view at the Gallery of the Fine Art Society. These are mostly free and slight sketches aiming at giving impressions of light and colour. Some of these are very bright and effective; among the best are "Lemon Gatherers" (14), "Under the Olives" (6), and "Spring" (22). There are some clever studies, too, of the fashionable crowd of Monte Carlo—"Café de Paris" and "On the Terrace" for instance (17 and 18), and a higher note is touched in "Daydreams—an Idyll" (49), where a young girl stands on the balustraded terrace, her back turned to the spectator, amid a brightly-lit mass of vegetation with the blue of the calm sea for a background. The largest work in the collection, "It Rains" (33) is an interior of a cottage with a figure at the window, in quite a different manner from those already mentioned; an interesting work somewhat recalling the feeling of Israels in a similar class of subject. A very interesting drawing also is that entitled "École Communale" (64), a clever and characteristic study of a file of peasant children entering the school.

A Repoussé Silver Exhibition.

AT the Fine Art Society's Gallery there is also a small collection of works in beaten and repoussé silver, by Mr. Gilbert Marks, with a preface to the catalogue by Mr. Spielmann. These prefaces seem to be inserted to tell the spectators what to think of the works, visitors being supposed to be unable to form their own conclusions. As we are not among those who are ready to submit to this kind of guidance, we may say that both artist and preface-writer have failed to appreciate the real requirements of decorative silver work as applied to objects for use. Mr. Marks's treatment of repoussé work is bold and free, and shows the hand of an accomplished craftsman, but his use of flower forms is far too realistic, and too ragged in line. This is especially noticeable in the treatment, for instance, of the feet or supports in the large bowl, No. 49, which are formed of twisted naturalistic stalks and leaves, bent round and resting on the bend formed by twisting them back; anything weaker in the way of a structural support could not be imagined. This is handiwork, but it is not *design*, which is quite a different matter. The supports in No. 51 are a little better, but still very deficient in structural and conventional quality. The small dessert stands (23, 24, 25) are in much better artistic style, but they are not among the most important exhibits. The wrought steel box inlaid with silver (43) is a good piece of work. But in general the collection shows a want of feeling for the element of design, and is far too imitative in the character of the ornamental work.

The Crystal Palace.

THE Crystal Palace prospectus for the summer season includes the promise of a new picturesque attraction, the electric light illumination of the fountains, which ought to have a fine effect. The work has been put into the hands of Mr. F. W. Darlington, electrical engineer, of Philadelphia, who carried out the instalment for the electric illumination of the fountains in Prospect Park, Brooklyn, U.S.A. It is also announced that arrangements have been made for the illumination of the terraces on the garden front of the Palace. The usual fine firework displays of Thursday evenings will, of course, be continued. There are various other attractions which it does not come within our province to notice; but we may call the attention of our numerous readers who are interested in music to the performance of Mendelssohn's "Elijah" on a great scale, on the Handel orchestra, which is announced for June 24. This oratorio seems to be generally selected for these *interim* performances on the Handel orchestra, on account we presume of its general popularity, which renders it the best "draw" in a financial sense. We may suggest, however, that when the opportunity again comes round, it would be a very interesting and probably not an unsuccessful experiment, to try one of Bach's two greatest works, the B minor Mass or the "Passion," on the same scale.

MEMORIAL TO FAMOUS WELSHMEN.—On the 23rd ult. Mrs. Herbert Roberts unveiled a memorial erected in the village of Llansaunan to immortalise the work and memory of five famous Welshmen, natives of the parish—viz., Tudor Aled Vaughan, 1470, a Franciscan monk of poetical renown; William Salesbury, born 1515, the translator of the New Testament into the Welsh language; Henry Rees, born 1797, the most eloquent preacher in the Welsh Calvinistic Methodist denomination; William Rees, his brother, politician and litterateur; and Edward Roberts, born 1819, a Methodist minister and writer of Welsh poetry. The memorial, which takes the form of a bronze figure of a little girl, attired in Welsh costume, seated at the foot of a granite column, and in the act of weaving a garland, is the design and work of Mr. W. Goscombe John, A.R.A.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS:

THE PLANNING AND CONSTRUCTION OF BOARD SCHOOLS.

A MEETING of the Royal Institute of British Architects was held on Monday at No. 9, Conduit-street, Regent-street, Professor Geo. Aitchison, R.A., in the chair. The meeting was made special for the suspension of regulations under By-laws 3 and 7, so as to allow of the nomination as a Fellow of Mr. George Frederick Bodley, A.R.A., Royal Gold Medallist elect. The suspension of the by-laws was unanimously agreed to.

Mr. W. J. Locke, Secretary, announced, with regret, the decease of Mr. Charles Bell, elected Associate 1870, Fellow 1880.

Mr. T. J. Bailey, Architect to the London School Board, then read a paper entitled, "Planning and Construction of Board Schools."

Dealing first with the public elementary school, the author dwelt upon the need for careful selection of the site. An ideal site would be one of about two acres, rectangular, with the longest side as a street frontage, and having a western aspect streetwards. There should be proper provision of light and air, immunity from noise of traffic for class-rooms, an open playground space of at least 30 superficial feet for each child, and of such a shape as to be available for games such as football for the boys, tennis, &c., for the girls. In London and crowded districts, where the ideal 30-ft. minimum cannot be realised, the playground question is usually best solved by providing on the ground level for boys and infants, and putting a flat over the whole top of the building to form a playground for the girls. Where sufficiently large, playgrounds should have a covered space, 50 ft. or 60 ft. by 18 ft., with sides enclosed, open in front to the sun. Various desirable accessories to playgrounds, the most suitable paving, walls, and railings, gates, the schoolkeeper's lodge, &c., were duly detailed by the author.

Next, treating of the buildings, the author described the three-story school, as being the most usual type. The infants are on the ground floor, the girls on the first floor, the boys above. The maximum size or accommodation of a group should not exceed 1,548—in departments of boys 516, girls 516, infants 516—and if further accommodation is required, it should be provided by a separate mixed department. The hall, considered by the Board indispensable to every department, is a very good size at 54 ft. by 30 ft.; the class-rooms, ten in number to each department, graduate from sixty to forty in accommodation. If possible the main line of class-rooms should face the playgrounds rather than a noisy road, and draw their light from the east, as that aspect suns up the rooms in the early morning and does not disturb them for the day. The hall, facing west, provides a good reservoir of sun-lighted air to help the class-rooms, and is a cheerful place to march the classes into for recreative or collective purposes. Architecturally, this elevation, being the more broken up (comprising the main lighting of the hall, the staircases, cloak, and teachers' room and blocks, and gable ends of wings), is more desirable for a street front than the long unbroken line of class-rooms. Two staircases for each senior department are required, and two entrances for the infants on the ground floor. The author then described in detail the plan of the building, the dimensions of the various rooms and staircases, the fittest materials for facing walls and for floors and staircases, the requisite fittings, and the lavatory and sanitary arrangements.

Touching warming and ventilation, the author glanced at the efforts towards improvement in these matters during the last twenty years. He commended as very good the system of low-pressure hot-water pipes round the walls and just above the floor, where the desks are placed, and a few ventilating radiators bringing in warm, fresh air; but, even with this system, an open fire in the room is needed, the brick flue simply connecting with the outer air not being sufficient for extraction. The author had tried trunks from the ceiling line of each room gathered into groups, with a single outlet equal to the combined area of the group, and with a coil of hot pipes in the same to produce an upcast. This was effectual as far as ventilation was concerned, but could not be recommended for schools of more than one story in height; in three-story buildings it had the effect of conveying the sound from the rooms below to those

above, and disturbing the classes. The greatest care should be taken to get continued purity of air, and with as little trouble as possible. The system known as the "Plenum" effected this in the only satisfactory way; it introduced fresh filtered air above the heads of the occupants of the room, warm in winter and cool in summer, diffused it over the area, and extracted it at the floor level on the same side as the inlet, carrying away with it all the unpleasant odours of damp and evil-smelling garments. This system has the further advantage that where closed and even double windows are necessary to exclude noise, there is always a quiet side from which the supply of air can be drawn, and the closed and double windows improve the working. The cost is not appreciably more than an ordinary hot-water installation, but the builder's work involved in the formation of ducts, flues, &c., is a rather costly item.

In a section on furniture and fittings, the author dealt with the pattern of desks, and their arrangement in the various departments, the lighting, the seating accommodation, platforms, cupboards, and the adjuncts found essential for educational and recreative purposes. Interesting reference was made to an order issued by the Board to each of their schools, requiring a plan of the departments to be prepared by the scholars under direction of the teacher, measured and drawn to a scale of 4 ft. to the inch, the furniture delineated, and the walls coloured in, and submitted to the architect for approval before being framed and hung up in the school. Some two or three hundred of these plans had been submitted to the author, and he had been much surprised and pleased at the high quality of the work. Few had been returned for revision, and some would have been no discredit to an architect's office.

The higher grade schools, of which there are forty-four in operation under the London School Board, are equipped with rooms for science teaching in addition to those for art and manual work. They comprise chemical and physical laboratories, with balance room and small dark room for experiments in photography, and a store for chemicals; also a demonstration and lecture room. The buildings, fittings, and general arrangements of the Cassland-road School, Hackney—a typical example of the higher grade school—were shown in a series of detail drawings exhibited by the lecturer.

A third division of the paper was devoted to buildings for special instruction, comprising centres for domestic economy (cookery, laundry work, and housewifery), manual training in wood, manual training in metal-work, swimming. The combination of subjects in the domestic economy curriculum has led to the requirement of a building in each case capable of giving proper facilities for the teaching. A typical building, planned after consultation with the committee in charge of these subjects and the lady superintendent, consisted of a class-room on the ground floor, 22 ft. by 18 ft., seated for forty girls, a kitchen, sitting-room, scullery, and bedroom, with entrance-lobby and staircase leading to the laundry and cookery class-rooms on the upper floor, the object being to provide instruction in general housework, as well as cookery and laundry work. Details were given of the requirements of the Manual Training Centre for wood and metal work. With the sanction of the Education Department the Board have decided to establish three swimming baths in connexion with the schools at Marlborough-street, Southwark, Hugh Myddelton, Finsbury, and Lyham-road, Brixton. Particulars were given of the proposed bath at Lyham-road. The building will be separate from the school, and have a distinct and separate entrance, with superintendent's office, &c. The swimming pool will be 50 ft. by 20 ft., 2 ft. 9 in. deep at one end, and 5 ft. 6 in. at the other, lined with white glazed bricks, and having dressing-boxes, spray baths, water closets, &c., and washing and drying-room for towels and bathing dresses. The water will be warmed by the injection of steam round the sides close to the bottom of the bath, the pipes being in chases and cased for protection.

The mixing of children mentally weak with those of normal intellect being productive of undesirable effects on both, it has been found necessary to provide accommodation for these in specially planned buildings. There are thirty-nine centres in actual work in London, with 1,597 children on the rolls (October 31, 1898), and about thirty-five more are either in course of building or immediately contemplated. The unit for class-room is less than that for the ordinary school, more individual attention being required. The class-rooms are all on the ground floor, are 20 ft. square, and seated for twenty children. A hall corridor about 20 ft. wide, well warmed, and made as cheerful as possible, is provided for exercise, drill, &c. A good lavatory and baths are provided. Boys and girls are frequently taught in mixed classes, but have separate playgrounds and offices. Schools for the deaf are also provided on the centre system, and are much on the same plan as those for the mentally defective. The class-rooms are smaller, 18 ft. square, and seated for ten. Seats should be arranged in a circle, and the rooms should have a strong high or top light so that the lips of the children can be watched and studied, they being taught to read what is said by the lip movement. The Board have seventeen centres in operation, with 513 children on the rolls (October 31, 1898), and seven in course of provision. Particulars were given by the author of a scheme for the establishment by the School Board of a home for the boarding and instruction of deaf children who had to be taught on the sign system. The schools will be built on the cottage home principle, the number in each home not to exceed ten, and the training will be largely agricultural or horticultural. In most divisions of the London district, school accommodation has to be provided for a few blind children. These number about 150, distributed over eight centres, and it is generally sufficient to provide two small class-rooms at each centre, with separate entrances, cloak-rooms, and lavatories, the classes being mixed. Separate play-yards and closets are necessary.

Under the head of buildings for the training of teachers the author described a scheme of buildings for this purpose which might be considered as very complete, and as embodying all that is likely to be required in the future. On the ground floor are provided four class-rooms for forty-two and thirty-six, two of each, seated with single desks, a central hall, 50 ft. 6 in. by 33 ft. 6 in., with staircases, &c., at each end. On the first floor are four class-rooms and a properly equipped gymnasium over the hall; on the upper floor an art room over the gymnasium, the remainder of the floor being devoted to chemical and physical laboratories, lecture-room, balance and dark rooms. A basement is provided for the engineering apparatus, and also a kitchen for the preparation of luncheons. The site of the particular buildings dealt with was large enough to give space for lawn tennis on the girls' side and for football on the boys'.

The buildings for industrial and truant schools, which next came under consideration, must be of an essentially different character from other buildings of the Board, as they are boarding establishments. Descriptions were given of a building recently erected for this purpose in connexion with the Shaftesbury Training Ship, and also of the Upton House Truant School, the only building as yet erected specially for the purpose. The Board are negotiating for a large site of some fifteen acres in the neighbourhood of London, for the purpose of erecting two establishments—an industrial school for about 120 boys, and a truant school for a like number. The two institutions will be entirely separate as far as their occupation and management are concerned, but will probably be under the control of one superintendent and body of managers. Details of the proposed plan and general arrangements of the buildings were given by the author.

For the purposes of the administrative work of the Board, London is divided into eleven divisions, necessitating a corresponding number of office buildings. The offices for the East Lambeth Division, now erecting in the Peckham-road, were selected for description as a typical block. On the ground floor is the entrance hall, a large room 57 ft. by 22 ft., for the visitors to perform their clerical work; a room for the assistant superintendent, and an office for the check clerk, also the lavatories, water closets, &c.; on the first floor a committee-room, used also by the superintendent, and a clerk's office; on the second floor the correspondents' and clerks' offices, and caretaker above.

In a few general remarks with which the paper closed, the subject of cost was dealt with. The Princess May School, Kingsland was cited as a typical case, and as tenders were received only so lately as March of the present year, it may be considered as up to date. The building is to be of three stories, to accommodate 1,548 children on a site of about 1¼ acre. The cost per head is estimated to be 13*l.* 18s. 4d. This includes building the whole of the brickwork in cement, also the provision of glazed bricks to staircases, corridors, and dadoes of class-rooms and halls, but does not include furniture. The cost of enclosing the whole site with walls and railings, tar-paving, drainage, and provision for deep foundations below a normal depth of 6 f t. is about 5,000*l.* more. The total cost will be some 750*l.* within the limit allowed by the Education Department. There was a suggestion a few years back that unnecessary expenditure was incurred on architectural adornment, and the committee dealing with this branch of the work ordered two or three schools to be built of stock bricks and slate roofs, with no architectural features about them. It was found, however, that the difference of cost between bare utilitarianism and buildings designed in some sort of style and regard for materials and colour was rather less than 5 per cent.

Mr. Locke read the following letter by the Chairman of the London School Board:—

"SIR,—I much regret that I cannot attend the meeting on May 29, as I am going abroad. Mr. Bailey's paper is of great interest to architects and educationalists, and deserves to be widely read and translated into foreign languages, as it is sure to attract the attention of foreign educationalists. Mr. Bailey speaks with authority. The building operations of the London School Board are on such a large scale; the problems which have to be solved are so varied; they have been so carefully considered by a number of experts, that Mr. Bailey's admirable review of this branch of the School Board's work cannot fail to meet with the full recognition due to the care with which it has been written.—Your obedient servant,

REAY."

The Hon. E. Lyulph Stanley (Vice-Chairman of the London School Board) said that to build a public elementary school was a matter which could not be approached simply by architectural skill and knowledge, because the conditions were very special. The architect had to follow the policy of the particular School Board or other managers of schools who employed him. An architect, thoroughly to know what a school ought to be, should be familiar with what had to be done in a school. Although Mr. Bailey had laid down a great many propositions as to what was best and most desirable, at the same time, in some things, his idea of what was best must have been limited by the parsimony of his employers. For instance, in describing what a class-room should be, he mentioned that he would put glazed bricks as high as the dado, and then above that he would have the wall of a special type of brick. Now, a provincial School Board, say Liverpool or Birmingham, would probably demand that the walls should be thoroughly finished with plaster, not left in the rough brick; therefore he did not think, because Mr. Bailey, working for very economical, not to say parsimonious, employers, had indicated certain roughness and want of finish in the building, that that really indicated the type of building an architect free to advise his employer would consider was the proper way of finishing his building. He agreed with Mr. Bailey that the furthest scholars ought not to be more than 20 ft. or 22 ft. from the windows, getting their light from the left; but Mr. Bailey had not mentioned in how many of these matters the School Board for London had had to carry these educational points almost by force against the Education Department. Only quite recently the Board had been invited to make their furthest row of seats some 24 ft. from the light. With regard to the use of halls in dealing with the discipline and education of children, that was a school-manager's question, not an architect's. There was not the slightest doubt that, if a room was to be used for one purpose, it had better be constructed for that purpose; they should not attempt to make it answer some other purpose. In the interest, however, of supposed economy the Department sometimes suggested that they should put a class in the hall. It would be apparent to architects how bad it was to have a class

in a room some 50 ft. by 30 ft., which was used as a passage for children going to and from the various class-rooms. Apart from that, it put a great strain upon the voice of the teacher. Architects, in considering a school plan, should concentrate their attention first and foremost upon the arrangement of the class-rooms. There were many disputed questions in school planning. Mr. Bailey spoke about the stepping of the floors, but experts were not at all agreed as to whether the floors of the class-rooms should be stepped or not, and whether the platform from which the teacher delivered instruction should not be raised and the floor flat. On the Continent, where people were supposed to have paid a great deal more attention to school planning than in England, the rule was against stepping a floor. These things could not be treated as questions absolutely decided ; but such questions as the size of a class-room and the cubic content depended very much upon the rapidity with which the air could be changed. There was not the slightest doubt that for the facility of a class seeing the black-board, and for the diminution of the strain upon the teacher's voice, and for lighting the room quite to the back from the windows, it was not desirable to make the class-room a bit larger than was absolutely necessary for the health of the children. Teaching was much more pleasantly conducted in a moderate-sized room than in a large one ; but they must have air. Mr. Bailey, he thought, had not fully brought out the importance of varying the size of the class-rooms. The work of teaching in the more advanced classes made smaller class-rooms necessary for the higher divisions, in order to lessen the strain on the teacher. There had been days when the Education Department recognised in its Code a class of eighty, and in those days an economical School Board built class-rooms for eighty. One result of planning schools in that way in the earlier days was that, now that people had a higher idea of what was due to the teaching of children, a certain amount of space was wasted. Fifty children, for instance, were put into a class-room originally planned for sixty, with the result that ten places had to be written off and were unavailable. But coming back to his former proposition : it was policy that determined plan, and it was not the architect who determined the policy ; it was the Education Department, or the particular Board who employed him, and the public opinion of the country. Still, if architects made themselves familiar with the requirements of school planning, they could make recommendations to the Board when they were called in, and their influence might do something to educate the Board who employed them.

Mr. C. J. Dawson (head-master of the Aldenham-street School, St. Pancras) said that in the building he was constantly engaged in there was one large room that accommodated over eighty scholars, according to the dimensions laid down in the Code, and it was only separated from another room by a sliding partition ; the other room accommodating sixty ; so that it was practically a large room for 140, separated by a sliding partition. Two other rooms at each end of the building were also separated by slight walls and partly sliding partitions, and those accommodated rather over forty each. If they were taken together they were very inconvenient and too large for a teacher properly to manage, and if they were taken separately the classes were smaller than the Board and the Education Department required to be placed under the control of a single teacher. The question of ventilating and warming was a combined question, because if scientfic principles could be thoroughly applied, there should be a system possible by which the warming should help the ventilation and the ventilation assist the warming, in one way, by supplying cool air in the summer time and warmer air in the winter, If the system referred to by Mr. Bailey fulfilled all that was claimed for it, it ought to be put into operation in every school where it was possible, and, at all events, in every new school, unless the cost was so large as to be utterly prohibitive. But in many schools he was acquainted with the ventilation was an entire failure by the system provided. He thought Mr. Stanley had given the main points with regard to the size of the rooms, the arrangement of the light—which should come from the left-hand side—that no one should be seated too far from the light, and that there should be no dark corners. That was a very important point, both for the sake of the teacher and the scholar, and on the ground of discipline. In his own school there were corners where the light from the windows did not reach at all, and the children could not see properly there, so that a part of the room was wasted, which could have been utilised if the light had been better distributed. With regard to the size of the rooms, Mr. Stanley had called attention to a very important point, namely, that the rooms should not be larger than was absolutely necessary for the health of the children and to permit of sufficient air space. That was an important consideration also from the point of view of the teacher's voice. Nothing had been said about the acoustic properties of rooms where teaching had to go on. Sometimes the rooms in a school were not at all well adapted for sound. He did not understand the principles of construction which would make the sound more effective, but before he came under the London School Board he had had to manage the whole of a school in a large room, over 60 ft. by 30 ft., and fully 20 ft. high. Several classes were taught in that one large room, and the echoes were so confusing that it was a very great strain upon the teachers' voices, and yet they had a difficulty in making themselves heard distinctly by the scholars. The time of those large rooms seemed to have passed, and the class-room system was now generally adopted in the newer schools. This matter of acoustics certainly affected the question referred to by Mr. Stanley as to classes being held in school halls. In such cases the voice of the teacher was carried round and up by the celling, and was lost to the scholars, and raising the voice very often made matters worse. It was very difficult to pitch the voice so as not to produce confusing echoes in a room of that sort, and the fact that the class only occupied one-fourth of the room made it worse. If the room were full it would be less difficult to make the voice heard all over it than if only a small portion of it were occupied and the rest empty.

Mr. E. W. Mountford proposed a vote of thanks to Mr. Bailey for his very useful paper. They heard of these hundreds of schools being built in the last few years, and of the large number that were coming on, and for Mr. Bailey's own welfare it seemed advisable that some of the work might be given to other architects. What had interested him most was the reference to the warming and ventilation of the buildings. Only five or six years ago some plans of his had to go before the late Mr. Ewan Christian, acting on behalf of the Charity Commissioners, and he, with the later buildings of the Board before his eyes, absolutely refused to allow any kind of mechanical ventilation to be put into the building. Mr. Christian said he had recently examined, at the request of the Board, some of the London schools, and had come to the conclusion that there was nothing in the way of ventilation to equal windows. Windows that went up to the ceiling and opened at the top provided absolutely the best ventilation that could be got. Acting on his command, he (the speaker) had to cut out his system of ventilation, and he had been more or less abused for several years past in consequence. The "Plenum" system, which Mr. Bailey seemed to favour, was probably the best system ; but he should like to hear his opinion of that system in, say, ten years time. Only quite recently several members of the Institute Council were taking over a large building in Birmingham which had recently been fitted up with this system, and he had been struck with the considerable accumulation of very black dust in the ducts through which the warmed air was forced into the various wards. Now, that dust represented simply the thicker and heavier particles which the fans had not been able to force into the wards, and it seemed to him an absolute certainty that a great deal of dust had been forced into the wards and swallowed by the patients. In a new building there was not much objection to that, possibly, but as time went on and the soot accumulated, and more and more was forced into the lungs of the patients, it would become a very big question whether the "Plenum" system would not be taken out of those buildings and something of a different nature put in. It was said of the "Plenum" system that it was equally available in summer for forcing in cool air. That, he thought, was a great mistake. People did not mind having air forced into a room so long as that air was very warm, but when they began to force in cold air the inevitable result would be that the occupants of the room would block up the openings.

Mr. R. Phené Spiers seconded the vote of thanks. He had built two of the first Board schools, and he could see now that they were built entirely wrong, but they were built according to the policy of the Board at that time.

The vote of thanks having been agreed to,

Mr. Bailey, in responding, said he was glad his paper was considered a useful one. He had tried to make it as comprehensive as he could, as he thought it right that the Institute should be acquainted with the details of the extensive work the School Board were carrying out.

The Chairman said that it might be safely considered that if children were put into rough, uncultivated, unattractive places they could not be expected to gain that admiration for beauty of form and colour which was so necessary to human happiness, and also for that which so largely affected the bulk of the people, viz., progress in trade. He was of opinion that the walls of their schools should be covered with some beautiful tiles or enamelled bricks, that the best art that England could supply should be constantly before the children when their attention was not engaged in their lessons, and that everything should be as simple as possible, but with a certain amount of grace, so that their faculties might be cultivated to admire the beauties of Nature which they saw around them. He had had some small experience in that kind of thing, and he found that even those students who were specially devoted to form and colour had a remarkably small observation for the objects of Nature by which they were surrounded. —the simple shells, the simple flowers, the simple leaves. If that was the case with people who were trained to study, how much more so was it with those whose artistic faculties were left dormant, and were surrounded with quasi-ugliness ? He hoped the gentlemen more particularly interested in the work of the Board would give a thought to the subject he had mentioned.

The meeting then terminated.

THE SURVEYORS' INSTITUTION :

ANNUAL MEETING.

THE annual general meeting of the Surveyors' Institution was held on Monday afternoon in the new premises, 12, Great George-street, Westminster, Mr. Robert Vigers, President, in the chair.

The first business was the reading of the Scrutineers' report on the election of Council for 1899-1900. Mr. T. M. Rickman has been elected President. The new Vice-Presidents are :—Mr. A. Vernon, High Wycombe, and Mr. H. Drew, Exeter ; and the new members of Council are Messrs. Leslie R. Vigers, Thomas Blashill, and, as Professional Associate of Council, A. Norman Garrard.

The Secretary, Mr. Julian C. Rogers, then read the thirty-first annual report of the Council. We take the following extracts from the report :—

The total number of all classes on the roll on May 1, 1899, is shown in the following table, which also gives the numbers at the corresponding date in May, 1898 :—

	May, 1899.	May, 1898.
Honorary members	16	17
Fellows	1,887	1,835
Professional Associates	686	615
Associates	84	85
Students	308	272
Colonial Fellows	12	12
Total	2,993	2,836

The difference in the number of Fellows is due to the election, under the dispensing power, of fifty-six candidates for that class, and the transfer of thirty Professional Associates who have passed the Qualifying Fellowship Examination, deducting those who have died or ceased to be members. The increase in the class of Professional Associates is accounted for by 116 elections, as against thirty transfers and fifteen losses by death and cessor of membership. The number of students was increased by thirty-six, allowing for those whose studentship expired by efflluxion of time, or who, having passed the examination in Division II., became Professional Associates.

The Council have to record, with deep regret, the death of their late President, Mr. Christopher Oakley, who occupied for many years a leading position in the profession and who rendered signal services to the Institution ; of Mr. Thomas Scarth,

an eminent land agent and surveyor in the north of England, who served on the Council for some years; of Mr. W. C. Little, of Stag's Holt, a well-known authority on the economics of agriculture; of Mr. Bovill Smith, Mr. George Beaumont, and Mr. George Brown, of Barnstaple, who were among the oldest and most respected members, and of Sir John Fowler, the distinguished engineer, who had been an Associate of the Institution from its earliest days. . . .

The "Institution" Prize of the value of fifteen guineas was gained by a candidate in the "Building" Sub-Division of Division II., who obtained 860 marks out of a possible 1,000. The "Special" Prize of the value of ten guineas was awarded to a candidate in the "Building" Sub-Division, who obtained 788 marks out of 1,000. The "Crawter" Prize, for the best work in the subject of "Valuations" in the Division IV. Examination, was awarded to a candidate in the "Land Agency" Sub-Division, who obtained full marks in the subject. The "Penfold" Gold Medal was awarded to the candidate who obtained the highest marks in Division IV., viz: 855 out of a maximum of 1,050. The "Penfold" Silver Medal was gained by a "Building" candidate in Division III., who also won the "Driver" Prize of the value of 15*l.*, with a total of 1,044 out of 1,200 possible marks. The "Preliminary" Prize was awarded to the candidate heading the list in the Preliminary Examination, with an aggregate of 492 out of 500 marks. The "Daniel Watney" Forestry Prize has not been awarded this year, there being no candidate whose work was of sufficient merit to justify its award. . . .

Again, for the tenth year in succession, the Council have to thank the Right Hon. the Earl of Jersey for placing a large portion of his park at Osterley at the disposal of the Institution for the purposes of the "Surveying and Levelling" and "Timber Measuring" "Outdoor Examinations," and for the hospitality which, on the days of those examinations, he extended to examiners and candidates alike. They desire also to express their obligations to Mr. W. D. Little, his lordship's agent, for his kind and considerate arrangements. . . .

There has been a large increase in the Scottish committee since the date of the last report. It now numbers eighty-three members, thirty-seven having been elected under the dispensing power, on the condition that, after Christmas, 1898, no members should be elected in Scotland (subject to the special provisions of the by-laws) without previously passing the qualifying examination, the nature and scope of which has been agreed to. It is hoped that the result will be as satisfactory as regards the professional status of members in Scotland as it has proved to be in England. . .

The Council cannot allow the retirement of Mr. R. G. Clutton and Mr. Edward Smyth from their body to pass without an expression of their deep regret at the severance of their long and honourable connexion with the governing body of the Institution—the one on grounds of health and the other by reason of advancing years. To Mr. Clutton and the great firm which he represents, the Institution owes a great debt of gratitude. Mr. Smyth, who has been a representative of the class of Professional Associates for thirteen years, has been a most devoted friend of the Institution, and has rendered it services in that capacity, and as one of the honorary examiners, the value of which it would be difficult to exaggerate.

The Institution is at last in occupation of its new and permanent home, after many vexatious delays, some of them due to the present disturbed condition of the labour market. The rehousing of the Institution has engaged the anxious and almost unremitting attention of the Council for the last five years. Early in 1894, on the failure of the promoters of the Westminster Improvement Bill to carry out the scheme under which they had agreed to allot to the Institution an advantageous site on the north side of Great George-street, it was referred to the Building Committee to consider, and report on the terms for acquiring a sufficient area of the surrounding property for the extension of the Institution premises on the existing site. It is not necessary to follow the course of the rather difficult and complicated negotiations which ensued; it is sufficient to state that as a final result it was decided to acquire three additional houses, viz., 13, Great George-street, and 3 and 4, Little George-street, which, with the site of the then existing premises, afforded a building area of 6,700 square feet. For this area the Ecclesiastical Commissioners finally agreed to a ground rent of 1,000*l.* per annum, on a lease for 999 years, in place of the 1,070*l.* which the property was previously yielding, the Institution undertaking to put up a new and substantial building as security for this rent. . . .

With the close of this session the thirty-first volume of the *Transactions* of the Institution is completed. It may be of some interest to mention that this series of thirty-one volumes is made up of 400 parts comprising 250 papers with the discussions upon them, and thirty-one annual reports of the Council, the whole amounting to some 15,200 pages of matter. . . . The last volume deals with subjects so diverse as, "The London Building Act," "The Management and Valuation of Brickfields," "The Working of the Light Railways Act," "The Valuation and Rating of Tithe Rent-charge," "Railway Rates," and "The Recent Proposals to enable Working Men to Purchase their Dwellings by Means of Loans from Local Authorities."

The last issue of the *Professional Notes* contains a Scottish supplement, intended as the vehicle for the publication of professional information of special interest to the members north of the Tweed, and the Council confidently count upon the co-operation of the Scottish members in making this feature of the *Notes* worthy of the volume of which it will in future form a feature. Since the issue of the last Council Report a revised index to the eight completed volumes of the *Professional Notes* has been complied with a view of facilitating reference to their contents.

The Junior Meetings have been fairly well attended, but the Council would like to see a larger number of the younger members taking an interest in these meetings, which should have excellent results in developing their powers of thought and expression.

Particulars of applicants' qualifications have been furnished to upwards of one hundred employers, during the year, and it is known that in the majority of cases engagements have resulted. It is, however, impossible to give precise statistics, as in many instances no notification is sent to the secretary of the result of the introduction.

Something more than a bare allusion to the second country meeting, held this year at Bristol, on April 26 and 27, will be looked for in this report. It was attended by about 140 members, most of whom were present at the meetings in the reception room of the Council House, and dined together at the Grand Hotel in the evening. . . . The Council are happy to learn that the visit to Bristol was regarded by those who took part in it as an unqualified success, and as likely to be conducive to a better knowledge and appreciation of each other by the town and country members of the Institution. . . . .

On the motion of Mr. Swain, seconded by Mr. Stower, it was agreed that the report and balance-sheet be received and adopted.

On the motion of Mr. T. A. Dickson, seconded by Mr. Pilditch, a vote of thanks was accorded to the auditors.

Mr. Harston then moved a vote of thanks to the President, Vice-Presidents, and other members of the Council for the able manner in which they had administered the affairs of the Institution during the past year.

Mr. H. Chatfeild Clarke seconded the motion, which was agreed to.

The Chairman acknowledged the vote of thanks, remarking that the work of the Institution was increasing, and it required the constant attention of the Council and their friends Mr. J. W. Penfold, hon. secretary, and Mr. Julian C. Rogers, secretary. The Institution was fortunate in having had the services of those two gentlemen for so many years.

On the motion of Mr. Warner, seconded by Mr. T. Jones, the thanks of the Institution were accorded to Mr. Penfold, Mr. Rogers, and the members of the staff.

Mr. Penfold and Mr. Rogers having suitably replied, a vote of thanks was, on the motion of Mr. R. Perry, seconded by Mr. C. J. Mann, passed to the scrutineers.

Prizes were then presented by the Chairman as follows:—The Institution Prize to Mr. H. A. A. Gate, of London; the Special Prize to Mr. A. G. Bradshaw, of Lancaster; the Penfold Silver Medal and the Driver Prize to Mr. G. Freeman, Wimbledon; the Penfold Gold Medal to Mr. S. A. Smith, Haverstock Hill, N.W. (Mr. Smith gained last year the Penfold Silver Medal and the Driver Prize); the Crawter Prize to Mr. F. J. Bowden, Barnstaple; and the Students' Prize to Mr. A. W. Leat.

On the motion of Mr. E. W. Rushworth, seconded by Mr. H. H. Collins, a vote of thanks was passed to the Chairman.

The Chairman replied. He then introduced the new President, Mr. Rickman, to the meeting, and invested him with the gold chain of office.

Mr. Rickman then took the chair, and expressed the pleasure it gave him to stand before them as their President.

Mr. Vigers said he had omitted to tell the meeting that he hoped shortly to make a start in connexion with a benevolent fund for the Institution. What was proposed to be done would be brought before the members shortly.

The meeting shortly afterwards concluded.

HOTEL, WEYMOUTH.—The new Royal Hotel at Weymouth, which was opened recently, has been built on the site of the old Royal. The new building contains over a hundred rooms, the electric light being installed throughout. Messrs. Creaton & Co. were the builders, and the architect was Mr. C. Orlando Law, of London.

THE DISPUTE IN THE BUILDING TRADE:

A SETTLEMENT.

A CONFERENCE was held on Tuesday morning, at the Salisbury Hotel, Fleet-street, between representatives of the Master Builders' Association and the National Association of Operative Plasterers, which resulted in the practical settlement of all points in dispute between the parties, and the dislocation of trade which has existed since February is now at an end. The representatives of the Master Builders who attended were Mr. Alderman Holdsworth, President of the Association; Mr. Benjamin Greenwood, London; Mr. J. W. Sugden, President of the National Master Plasterers' Association, Bradford; Mr. G. Nicholls, Leicester; Mr. J. Higson, Salford; and Mr. C. W. Green, of Liverpool. On behalf of the Operative Plasterers there were present: Mr. Mark Jones, President; Mr. M. Deller, General Secretary; Mr. D. Hennessey, London; Mr. H. Duckett, Birmingham; Mr. G. Jackson, Manchester; and Mr. A. McLeod, Newcastle-on-Tyne. The delegates chose Mr. E. T. Cook (Editor of the *Daily News*) as Chairman of the Conference. From the first there was an evident determination on both sides to arrive at a solution of the differences which had disturbed the trade.

After considerable but considerate discussion, the following terms of settlement were arrived at and signed:—

Non-Union Foremen.—With regard to Clause 1 (*a*) and (*b*) of the employers' "Manifesto," which alleges:—

The persistent attempt to coerce foremen of plasterers, of superintendents of plasterers' work into the membership of the National Association of Operative Plasterers; also:

The withdrawal of all members from the building firms employing such foremen or superintendents.

It is understood that the vote of the Plasterers' Association in London, in February, against this practice settles this point.

Apprentices.—With regard to Clause (2) which deals with the limitation of apprentices, it is agreed that, as this question is peculiarly complicated, different practices prevailing in different districts, both as to the extent to which apprentices are employed, and as to the ages at which they begin their apprenticeship, the question shall be referred to a special joint committee of both sides to draw up working rules to govern the matter. This Conference is of opinion that the difficulty with regard to the proportion of apprentices could best be solved by a provision that every apprentice should be legally bound.

Boycotting and Blacklisting.—With regard to Clause 3 (*a*) and (*b*), which charges the Plasterers' Association with:—

(*a*) The practice of boycotting certain building firms and employers of plasterers, in spite of the fact that such firms adhere to the rules agreed between the Master Builders' Associations and the National Association of Plasters.

(*b*) And the practice of printing and circulating amongst the members of the National Association of Operative Plasterers a list of such firms for whom they are forbidden, under penalty, to work.

It is understood that, while not admitting the accuracy of these allegations, the Plasterers' Association give an undertaking that no such boycotting or blacklisting shall take place in future where the firms adhere to the rules mutually agreed upon, the employers, on the other hand, giving a definite undertaking that such rules mutually agreed upon shall be strictly enforced in all parts of their contracts.

Demarcation of Work.—With reference to Clause 5 (*a*) and (*b*), which alleges:

(*a*) The refusal to accept the decision of the employer as to which workmen shall do certain work, in cases where plasterers dispute with other trades as to their right to do such work.

(*b*) Practice of withdrawing all their members when such work may not be placed in the plasterers' hands.

It is agreed that for the purpose of the demarcation of work, joint committees shall be established in the different districts equally representative of the employers and the mechanics, whose representation shall be equally divided amongst the different branches of the trade in question. These committees shall, as far and as soon as is possible, draw up schedules of the work which it is recognised belong to certain branches of the trade. To such committees shall be immediately referred all points of dispute as to demarcation, and the decision of the majority in each case shall be accepted as binding on both sides. Should they fail, however, to decide, then the matter shall be referred for settlement to similarly constituted joint committee representative of the National Association of Master Builders and the other societies affected, whose decision shall be final, provided that the employers' representatives are bonâ fide employers of plasterers direct. Pending such reference to the local committees no strike or lock-out shall

take place, but the decision of the employer shall be provisionally accepted as to who shall do the work.

Provided that preference shall be given to that branch of the trade which, in practice, has done the work before in that district, and provided no preference be given on account of the payment of lower wages.

Non-Unionists and Disputes.—With regard to Clauses 4 and 6, which speak of

The refusal to work on buildings where some of the workmen employed may not belong to a trades union,

And of the objection to submit all trade disputes to discussion at a conference between employers and employed with a view to arrive at an amicable settlement prior to any strike or withdrawal of workmen,

It is agreed that, in the event of a dispute arising on any job or works, the District Officials of the National Association of Operative Plasterers shall send written notice to the Local Association of Master Builders, who shall inform them whether the said builder is a member of that body. If so, a strike shall not be sanctioned by the N.A.O.P. until six clear working days have expired from the receipt of such notice, during which time the matter shall be considered by the employers and the representatives of the workmen with a view to an amicable settlement. It is understood that the men the Operative Plasterers object to work with are defaulters, and other men who have been shown to the employers to have made themselves specially objectionable to the Union men.

Foreign "Free Labour."—It is agreed that where the employers are able to secure British plasterers to meet their requirements they will dispense with the services of the Continental plasterers engaged during the present dispute as their contracts may expire. The employers will not require members of the N.A.O.P. to work on the same buildings with such plasterers. The members of the N.A.O.P. shall raise no difficulties in fixing work prepared by the Continental plasterers.

Signed by Wm. Holdsworth, President; Benjamin J. Greenwood; C. W. Green; George Nicholls; James Higson; J. W. Sugden; H. G. Hassal, Secretary (on behalf of the National Association of Master Builders of Great Britain and Ireland); Mark Jones, President; D. Hennessey; A. McLeod; George Jackson; Henry Duckett; M. Deller, General Secretary N.A.O.P. (on behalf of the National Association of Operative Plasterers). (In witness) E. T. Cook (Editor of the *Daily News*), Chairman of the Conference; Clement Edwards, of the *Daily News*.

GENERAL RULES.

The general terms of settlement having been agreed to, the representatives of each side retired to consider a suggested code of rules, submitted as embodying the general terms. This, however, the plasterers' delegates declared they were unable to accept, and the Chairman of the Conference was asked to draw up a code. This he did, and it was agreed to and signed as follows:—

1. The Plasterers' Association will not take any steps to control managing foremen of plasterers, or superintendents of plasterers' work, into the membership of the N.A.O.P.

2. (Apprentice—rules left for special joint committee to settle in accordance with the general agreement arrived at by the Conference.)

3. No boycotting or blacklisting shall take place by the N.A.O.P. in future where the firms adhere to the rules mutually agreed upon. The employers agree that such rules shall be strictly enforced in all parts of their contracts.

4. For the purpose of the demarcation of work joint committees shall be established in the different districts, equally representative of the employers and the mechanics, whose representation shall be equally divided amongst the different branches of the trade in question. These committees shall, as far and as soon as is possible, draw up schedules of the work which it is recognised belong to certain branches of the trade. To such committees shall be immediately referred all points of dispute as to demarcation, and the decision of the majority in each case shall be accepted as binding on both sides. Should they fail, however, to decide, then the matter shall be referred for settlement to a similarly constituted joint committee, representative of the National Association of Master Builders and the other Societies affected, whose decision shall be final, provided that the employers' representatives are bona-fide employers of plasterers direct. Pending such reference to the local committees, no strike or lock-out shall take place, but the decision of the employer shall be provisionally accepted as to who shall do the work, provided that preference shall be given to that branch of the trade which, in practice, has done the work before in that district, and provided that no preference be given on account of the payment of lower wages.

5. In the event of a dispute arising on any job or works the district officials of the N.A.O.P. shall send written notice to the Local Association of Master Builders, who shall inform them whether the said builder is a member of that body. If so, a strike shall not be sanctioned by the N.A.O.P. until six clear working days have expired from the receipt of such notice, during which time the matter shall be considered by the employers and the representatives of the workmen with a view to an amicable settlement. Failing a local settlement, reference shall immediately be made to a Central Joint Committee of the two Associations, and until five days have expired from the date of this reference, no strike or lock-out shall be sanctioned either by the N.A.O.P. or by the National Association of Master Builders. With regard to the alleged refusal of members of the N.A.O.P. to work with workmen who may not belong to a trade union, it is understood that the men the operative plasterers object to work with are defaulters and other men who have been shown to the employers to have made themselves specially objectionable to the union men.

6. These Rules shall be construed together, and in the light of each other.

The rules were signed as before.

Clause 2, as to apprentices, was left over to a committee to settle. This committee, consisting of three a side, sat in a separate room for an hour, but were unable to arrive at a definite settlement. The full Conference thereupon resumed its sitting, and after some discussion the chairman urged the following as a possible solution:—

No employer shall engage any additional apprentices to the plastering trade whilst the number of his apprentices shall exceed one-fourth of the number of journeymen plasterers then employed by him. All apprentices shall be legally bound.

The proposal was unanimously agreed to.

It was understood that the National Association of Operative Plasterers will have to submit the terms of settlement to their members for approval before work can be resumed. This vote will be taken next week, so that in all probability the men will be back at work early in the following week.

THE ARCHITECTURAL ASSOCIATION DISCUSSION SECTION.

THE thirteenth, and closing, meeting of the present session was held at 56, Great Marlborough-street, W., on the 26th ult., Mr. H. J. Leaning, Chairman of the section, presiding.

A paper was read by Mr. W. B. Hopkins on "Bacterial Methods of Sewage Purification, with special Reference to the Exeter Septic Tank."

Dealing with the question of the purity of the effluent from the treatment of sewage, Dr. Frankland some twenty-five years ago laid it down that there were three processes—filtration, irrigation, and chemical precipitation, all having as their object to free sewage from organic matter, either in *suspension* or (harder to deal with) in *solution*; and now science shows that bacteria have a great part to do in the oxidisation or the rendering innocuous to health of organic matter in sewage, and the results arrived at thus far by experts seem to show that by the action of two classes of organisms—firstly, aerobic, those that work in the presence of light and air; anaerobic, those which need to be kept from both light and air; and, secondly, organisms which attack organic matter in solution. Sewage can be purified, and a "filtrate" obtained finally free from all harm, bright and clear, and the engineer has to create conditions favourable to the growth of such organisms, adding no chemicals and keeping the temperature above freezing point.

Mr. Hopkins then described in detail the working of the septic tank at Exeter as laid down by Mr. Donald Cameron, the City Engineer. The plant consists of a large covered-in tank sufficient to take the sewage of one day, and for this suburb of Exeter (St. Leonard's) was about 64 ft. by 18 ft. wide and average 7 ft. 6 in. deep. Here the sewage passed slowly through and the effete matter was acted upon by the bacteria, so that practically no solid matter remained beyond a thick scum of floating material highly favourable to microbes. The sewage then passes through a slotted pipe at the further end of the tank and discharges on to one of five filter beds (about 80 square yards in area and 5 ft. deep, filled in with broken clinkers and coke) used in rotation; where, acted upon by aerobic microbes the effluent is rendered quite innocuous, and the final filtrate as discharged into the river Exe is considered highly satisfactory.

A similar plant has been laid down in Yeovil, in Somerset, and though it deals with the sewage from manufactories and breweries, a filtrate has been obtained by this process which has been pronounced to be satisfactory.

To architects, in conclusion, it meant that by means of an enclosed and sealed cesspool, and small filter beds, and some simple automatic apparatus connected with the same, the disposal of sewage to isolated houses or mansions in the country was rendered practicable, innocuous, and comparatively inexpensive.

A discussion ensued in which most of the members present joined. Mr. Max Clarke stated he had used a similar tank many years ago, which still worked with admirable results, and Mr. George Smith called attention to the lecture by Dr. Rideal before the Society of Arts as being, perhaps, the most advanced treatise on this important subject. Mr. Sydney Beale, Mr. Brodie, Mr. Taylor, and the Chairman also took part in the discussion.

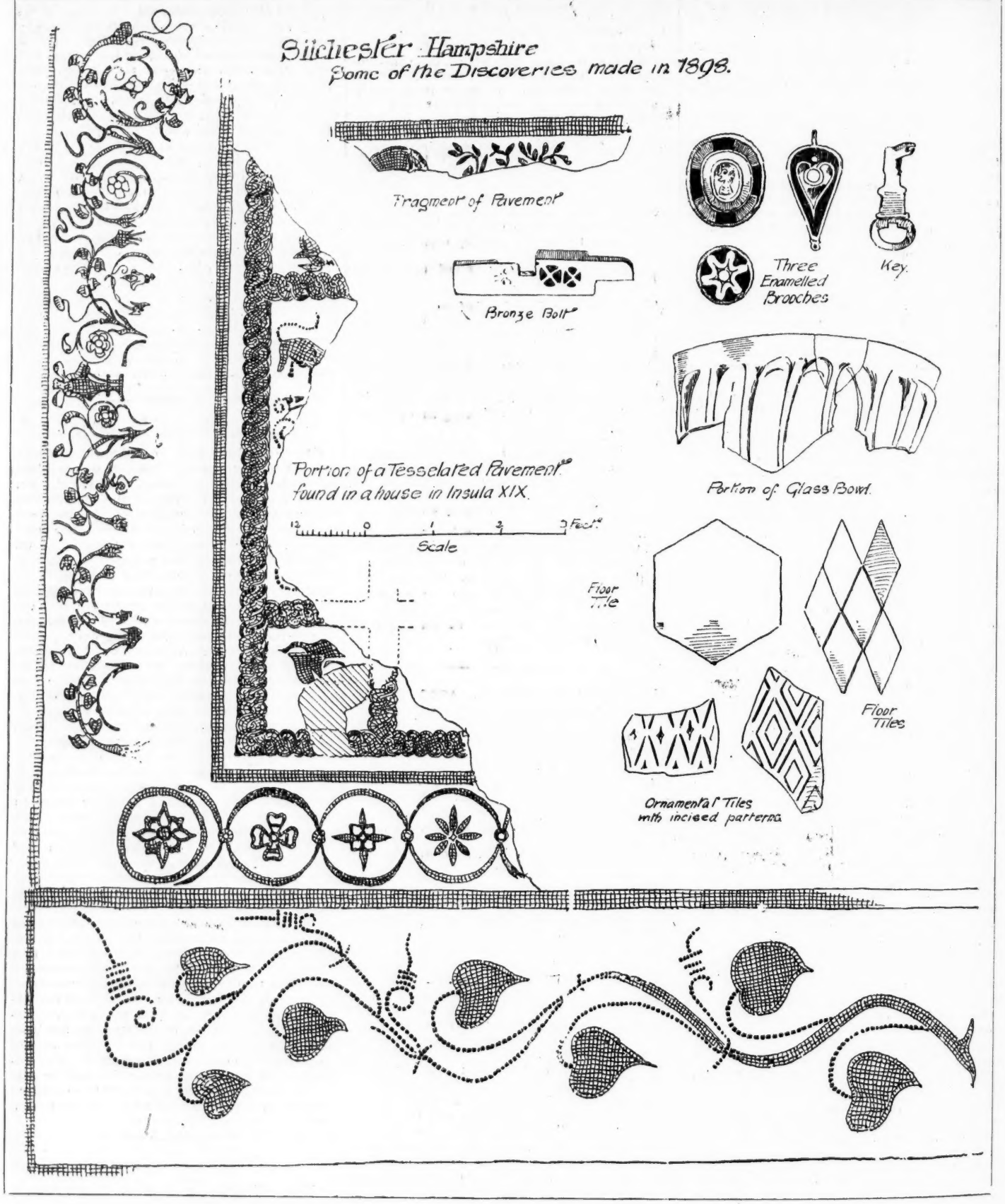
The meeting closed with a hearty vote of thanks to Mr. Hopkins; and also to Mr. H. J. Leaning and Mr. C. H. Strange, the retiring Chairman and Secretary respectively, for the successful discharge of the duties laid upon them during the session now ended.

ARCHITECTURAL SOCIETIES.

GLASGOW INSTITUTE OF ARCHITECTS.—A general meeting of this Institute was held on the 25th ult. in the rooms, Pitt-street, Mr. David Barclay, President, in the chair. The Chairman gave a summary of the business transacted by the council during the past quarter. The Corporation's Committee on Building Regulations had acceded to the suggestion of the Institute that a conference should be held between that committee and the representatives of the Institute while the clauses of the proposed new Bill were being considered, and before they had been passed by the Corporation. A committee of the Institute had had a meeting with the Corporation Committee, who considered it desirable that they should be favoured with the views of the Institute upon the existing building regulations and any alterations, amendments, or conditions which the Institute might suggest, especially as to the question of the height of buildings. As to the new matters which the Corporation might propose to deal with in the Bill, their Committee had promised to show these in draft to the Institute. The Secretary reported that the Royal Institute had decided to support the principle of Lord Russell's Bill on Secret Commissions, now before Parliament, and had assured him of their hearty co-operation and their sympathy with the objects of the Bill, and that the action they had taken in this matter generally was very similar to that which had been taken by the Council of the Glasgow Institute. It was also reported that the Royal Institute had agreed to their annual dinner in 1901 being held in Glasgow early in October of that year before the close of the exhibition, and it was resolved that a local committee be formed to make suitable arrangements for the occasion. The Institute agreed to take charge of the examinations for this district of the Royal Institute, which will be held in Glasgow during June, provided a sufficient number of candidates come forward for examination.

COMPETITIONS.

NEW WHOLESALE MARKET, LEICESTER.—On October 25 last the Council authorised the Market Committee to invite architects practising in Leicester to prepare designs in competition, and offered premiums of 100*l.*, 50*l.*, and 25*l.* for the three best designs. In accordance with the conditions of competition the Committee appointed Messrs. Leeming & Leeming to act as assessors. The awards have been made as follows:—First premium (100*l.*), Mr. Walter Brand, A.R.I.B.A, 16, Bishop-street; second premium (50*l.*), Mr. A. H. Hind, A.R.I.B.A., Greyfriars; third premium (25*l.*), Messrs. Blackwell & Thomson, Halford-chambers. The author of the design which has been awarded the first premium estimates the cost as follows:—Markets, 24,087*l.*; cold storage, 6,417*l.*; baths extension, 1,329*l.*; total, 31,833*l.*, which estimate Messrs. Leeming & Leeming state they have gone carefully into, with practically the same results as the competitor. On Tuesday last week the Markets Committee recommended the Council to authorise them to appoint Mr. Brand to act as architect, and this was adopted.



EXCAVATIONS AT SILCHESTER.

DURING the past twelvemonth the excavations on the site of the Roman city of Silchester, near Reading, have been continued, and the result is now to be seen in an interesting exhibition which is being held in the rooms of the Society of Antiquaries at Burlington House. It remains open until June 10.

The portion of the site investigated was in the south-west angle of the city, numbered on the plan as *Insulæ* xix. and xx. *Insula* xx., near the outer wall, and close to the south of the west gate, contained nothing of any great architectural importance, but a curious detached hypocaust was discovered similar to those discovered in 1897. The chief object of interest in *Insula* xix. was a large house of early date with fine hypocausts. Remains of an earlier house were found at a lower level, and to this earlier building belongs the fine piece of pavement which we are able to illustrate by the kind permission of the Society of Antiquaries. Its date has been placed as early as A.D. 80, and is the earliest pavement hitherto found. Two peculiarities may be noticed—the ground work of the pavement is of white tesseræ, and the braid ornament, generally so prominent a feature, here takes a secondary place. The outer black border was continued to the wall in each case. The central panel, of which only a fragment remains, was subdivided by braid ornament, and the panels had representations of foliage and animals. The broad ornamental border that surrounded this panel varied. On one side was a series of circles with centre conventional ornaments, and a boldly treated wavy representation of convolvulus leaves and tendrils in black tesseræ. On the other three sides were very beautiful borders of finer design and workmanship, of distinctly superior character to anything hitherto found in England, and approaching in detail more to the patterns already found at Pompeii. The colours used are black, white, red, and various grey tints, amongst the latter being many tesseræ composed of Purbeck marble. There is the usual pottery, some stamped with the makers' names, but nothing that calls for special notice. Among the smaller objects of interest are several bronze fibulæ and other ornaments, and three enamelled brooches, which we illustrate. The oval brooch has red and black enamel in the border, and a curious paste intaglio; it is about 1⅛ in. broad and 1¼ in. long. The circular brooch has a ground-work of dark blue enamel. This also occurs in the outer part of the pear-shaped example, the inner part being red and the small central circle yellow.

There are also several portions of very beautiful glass bowls of a pale blue colour.

Beyond the pavement already noticed there is nothing of much architectural interest, but among some smaller objects found are specimens of floor and ornamental tiles.

The excavations are still being carried on at Silchester, making the tenth season, and

funds are much needed for the carrying out of the work in the same efficient manner as hitherto.

THE ARCHITECTURAL ASSOCIATION:

ANNUAL DINNER.

THE fifty-second annual dinner of the Architectural Association was held on Wednesday evening last at the Holborn Restaurant. The chair was taken by Mr. G. H. Fellowes Prynne, the President, and among those present were: Venerable Archdeacon Sinclair, Sir Edward Clarke, Q.C., M.P., Sir Henry H. Howorth, M.P., and Messrs. C. A. Adams, R. S. Balfour, R. Blomfield, T. Blashill, A. Bolton, F. Bond, L. Butler, G. B. Carvill, W. E. Davis, F. R. Farrow, A. S. Flower, B. F. Fletcher, H. L. Florence, F. T. W. Goldsmith, Edwin T. Hall, H. T. Hare, A. H. Hart, E. Swinfen Harris, F. G. F. Hooper, W. J. Locke, F. W. Macey, P. J. Marvin, E. W. Mountford, Beresford Pite, W. A. Pite, F. W. Pomeroy, Dr. G. V. Poore, H. W. Pratt, E. A. Fellowes Prynne, J. C. Preston, W. E. Riley, E. Howley Sim, John Slater, W. H. Seth-Smith, H. H. Statham, C. H. Strange, R. H. Weymouth, A. W. Weedon, and W. White.

The Chairman proposed the toast of the Queen and Royal Family, which was duly honoured, and he then gave in one toast "The Church," and "The Houses of Parliament." The Church, he said, had in all ages been closely allied with architecture, and had had an incalculable influence upon their art, while that art in turn had exercised the greatest possible influence upon the Church and upon religion. Referring to the recent controversy in regard to the decoration of St. Paul's, he said he felt that the Dean and those interested in the work had the highest and noblest motives, and that the artist who had undertaken the decorations deserved all praise for the wonderful interest and industry which he had thrown into the work. But as architects they could not consider this matter only from the church point of view. They looked upon St. Paul's Cathedral as a national monument of architecture, designed and created by one of the most able architects England had ever produced, and therefore they felt that they as architects were directly interested in preserving this great work of a past generation. Sir William Richmond, in his letter to the *Times* the other day, adopted a very haughty tone, ignored the architect's profession altogether, and at the same time accused them of unprofessional conduct in the way in which they had raised this question. They desired to be in every way courteous to Sir William Richmond, but they could not look on and see this noble monument being utterly ruined, and the main lines of the building completely destroyed, without protesting. Sir William Richmond looked upon St. Paul's Cathedral as "a magnificent skeleton," to which he was able to give life by his colour and decoration. They could not agree with that. They looked upon the cathedral as a noble form already designed. No powder and paint were needed to improve it, and they must have the architectural lines kept intact. If any architect wished to experiment upon the walls of a building, the walls of this great national monument were not the right walls for such an experiment. Proceeding to deal with the Houses of Parliament, he remarked how little was done by the Legislature to encourage architecture and the building of great historical monuments which would tell to future ages the kind of people we were. How poorly the money expended in our great, rich England on architecture compared with that spent by a little nation like Belgium! It was a shame that a rich nation like ours should cut down the cost of its great public buildings, as had again and again been done. It was utterly unfair to condemn solely the architect for destroying the plan of the Law Courts, when they remember that he had been compelled to cut the cost down by three-quarters of a million. How could they expect that plans treated in this way after they were made would be satisfactory? Let the legislature think of architecture not merely as a thing to spend so much money upon, but as a thing that wrote the history of the nation in stone for all future ages, and let them create monuments more worthy of the country; monuments which, like those of Greece and Rome, would never be effaced.

Archdeacon Sinclair, in responding on behalf of the Church, said that part of his duty was to inspect the fabric of the churches, and he was struck by the very common fault of the absence of ventilation. Too much trust was placed for this purpose in doors and windows, and the result naturally was that large congregations grew heavy and stupid. He would like to see every church with a row of handsome ventilators breaking the sky-line of the roof. In another church he found the doors were so narrow and beautiful that it was impossible to get a coffin into them, so that they saw that practical knowledge was sometimes wanting even to the artistic and eminent architect. There were certain practical considerations that those who used churches might suggest to those who built them. But he admitted that the Church owed a great deal to the architects. The restoration of St. Saviour's, Southwark, reflected the highest credit on the architectural skill of the present day, and also the magnificent work that had been done at St. Bartholomew's, Smithfield. St. Philip's, Stepney, was a church of noble proportions and beautiful style, and showed what could be done when funds were liberally provided. Architects to-day were very conservative, but he could look back to the fifties, and could remember the ruthless way in which things were swept away because they were Renaissance or Elizabethan, and not in harmony with the original Gothic intention of the church. Thus history has been swept away all over the country under a purist Gothic impulse on the part of eminent members of the architectural profession. So they must remember when they gave their advice that the advice of their predecessors had not been always the wisest that could be given. As to the decoration of St. Paul's, the decoration committee welcomed the frankest and freest criticism and advice. He did not set up, and they did not set up, to be eminently qualified to judge on this question. The idea of the Dean had been to place himself in the hands of one recommended as a skilled expert in the question of decoration. He thought the committee was at present too weak to bear the strain of so great a work. They ought to have some architects versed in Palladian work and able to separate Palladian ideas from Gothic ideas, and also in full sympathy with Sir Christopher Wren. He also thought that they ought to have the assistance of the President of the Royal Academy, and perhaps the President of the Beaux-Arts in France, and possibly someone corresponding in Germany. In a matter of such great importance they ought to have the most consummate and able advice it was possible to get. Coming to the history of the question, he would remind them that Sir Christopher Wren did consider the place incomplete when he had finished the last stone, and he sent for four artists from Italy to do the mosaics, but he did not receive the sympathy of the committee who were raising the funds, and the artists had to be sent back again. To the day of his death Wren considered that the cathedral was incomplete. Not much was done until about twenty-six years ago, when the decoration committee was formed. The committee were long divided in opinion, and Mr. Burges, the architect, recommended a scheme which would have cost 450,000*l.*, and which would have covered the whole space with marble except where gilding and mosaics were intended. The scheme would have frightened the present generation even more than the scheme of to-day. At last the committee began with the reredos. He really hoped future generations would remove part of that reredos. It was originally intended only to have the middle piece, with light golden grilles, which would show the beautiful apse, which was now concealed. Then he hoped that future generations would remove the coloured glass windows, which, however suitable to a Gothic building, had made the chancel of St. Paul's simply a dark vault, in which none of the details could be distinguished. After the reredos had been put up the eminent architect who had been responsible recommended the Dean to take the advice of Sir William Richmond as to the mosaics. Sir William Richmond had been most self-denying, and had given up all other work for most moderate remuneration. It was true, as had been announced in the papers, that the committee had determined to remove the stencil-work. Sir Christopher Wren's own design included curtain work festooned with ropes, and stout cherubs holding up the ropes. But, of course, they were not bound to carry out the style of ornament of that day. Sir William Richmond had written agreeing with the decisions of the committee, and he believed that the result of this discussion would be satisfactory to the artistic and instructed minds of this country.

Sir Henry Howorth, M.P., responded for the Houses of Parliament, and with regard to the suggestion that Parliament did little for architecture, he pointed out that when nations were making history they were rarely artistic. When Nero performed the great public service of burning down Rome, it was Greek artists who were called in to rebuild the city. Our country had been more fortunate than Rome. We had a great series of buildings going back right to our earliest history, that for many of their qualities could not be matched. When we were masters of two-thirds of France our architects went there and not only taught the art but created some of the finest of the buildings of that country.

Mr. H. H. Statham then proposed the toast of "The Royal Academy and the Royal Institute of British Architects." The Royal Academy holds an annual exhibition where every year they might hear people saying: "Very poor Academy; nothing worth looking at," but they kept on going all the same. One of the rules of the Academy was that "no mere transcripts of objects of natural history" were admitted, and he had sometimes wondered how many works might be kept out on that ground. It was rather curious, and characteristic of modern times, that wherever there was an old-established exhibition there was a rival which professed to go further. In Paris, ten years ago, there was a split in the Salon and a new one was founded, which professed to be the artistic and poetic Salon *par excellence*, leaving the other to the popular mind. The New Gallery took the same place in relation to the Academy. Yet he did not believe there had been any year in which they could not find enough good pictures in the Old Salon or the Academy to crush their rivals. The difficulty was the large amount of mediocre work admitted. Architects made the very reasonable complaint against the Academy that it acted practically as if "art" meant "pictures." They spoke of architecture as the mother of the arts, but the mother of the arts was put in a hole. Decorative art was spoken of, but it had very little representation in the Academy. They had a right to expect better things, and that the Academy should give larger space to architectural design, and decorative work, and teach the public that art was art, and not merely painting of pictures. There was one thing about the Academy which was not sufficiently recognised. It could not create genius, but it could promote artistic education and uphold the standard of technique. Violent things had been said about the Academy for refusing to elect certain great artists, men who were said to be greater geniuses than most of the Academicians. Rossetti was one of those of whom this was said, but Rossetti himself admitted that he did not, and could not, draw the figure correctly, and did not care. In that case the Academy was right in excluding him. It might be said his pictures, though not well drawn, were worth more to the intellect than some Academic pictures that were well drawn. But that was beside the point; the Academy could decide upon technique, it could not decide whether a man was a genius. And now they came to the point of the connexion between the Academy and the Institute of Architects. The Institute had been assailed by people who said that they represented the art of architecture, and that the Institute did not. In the first place, the Institute was on a different plane from the art of painting and sculpture. It dealt with architecture as a profession. There was a great difference between giving a man two or three thousand pounds to paint a picture and giving him the spending of half a million on a building. For the latter he must be a practical man. The Institute could not make a genius any more than the Academy. But the Institute could insure that the standard of technical education had been kept up. That was what the Institute had been diligently trying to do lately, and it was the one thing it could be certain of. It could not say to one man, "You are an architectural genius," and to another, "You are not;" but it could take one man's work and say, "You are thoroughly educated as an architect," and to another, "You are not." He coupled the toast with the name of Mr. Aston Webb, whom he congratulated on his admission to the Royal Academy, feeling sure that he would work for getting architec-

ture better representation in that body; and also with the name of Mr. H. L. Florence.

The toast having been duly honoured,

Mr. Aston Webb, A.R.A., responded on behalf of the Academy, and at the same time referred to the fact that ladies were now admitted to the Institute of Architects, as a proof that the Institute was prepared to move forward with the times.

Mr. Florence also responded, and said that they looked to the younger members of the profession for the conduct of the Institute in the future. Those younger members had a quality not inherent in ancient and well established institutions, they had enthusiasm, and that enthusiasm would be of the greatest value to the Institute if they would join it. Many of them if they lived long enough might become Royal Academicians, but in the meantime there was something within their reach; by mutual education and by offering themselves for examination they might all become members of the Royal Institute of British Architects.

Sir Edward Clarke, M.P., then gave the toast of the evening, "The Architectural Association," coupled with the name of the President. The Architectural Association, he understood, was an educational body connected with the great art to which most of those present had devoted their lives. It was a body which, after living for rather more than fifty years, was now in the full stream of success, and had attained a position of great influence and authority in the architectural world. It had its classes, its lectures, all the organisations which helped in the promotion of a great profession. He spoke of their great art because architecture was, after all, an art—one of the greatest, and one the study of which was, he thought, more difficult, more full of complex problems, making more demands upon the capacities of the men who devoted themselves to it than any other art he knew. It was an art, that no one could deny; but at the same time it was an applied art, with a scientific side to it, and he had always felt that among the many occupations to which a man could give his life there was none that combined a greater degree of enjoyment of artistic life with the responsibility of scientific study. The great art of architecture was limited and controlled by considerations which did not affect what he might call the more mental arts, by questions of expenditure upon the production of its works. It was limited and controlled by questions of convenience on the part of persons who were going to use those works when produced. A painter would never think of drawing half a tree instead of a whole one because it would save him paint and canvas, and he never heard of a sculptor who made the arm of his figure half the length it ought to be in order to save the expense of marble. But architects unfortunately applied their art to what he might call the ordinary and minor interests of life, and they were limited and controlled severely by matters which had no relation to art at all. The committee that presided over the erection of one of those architectural triumphs which they had hoped to make was often a serious difficulty, because architecture was one of those matters, as they had had evidence that evening, upon which every one was competent to speak with authority. Then they were limited by questions of finance. It was not only the matter of expense in the work that had to be done. But unfortunately the best possible house that they could design was interfered with and spoilt by the man who was going, not to look at the house, but to live inside it. He might consider, for instance, that a serious modification ought to be made in the matter of a bath-room. The limitations of expenditure in production, and of the desires of the persons who were going to inhabit the productions when made, were serious limitations. It was remarkable that, with all these difficulties, architecture had been so successful. This was the wealthiest country that had ever had to deal with the administration of public affairs and the housing of public officials, and it had had to erect great masses of architecture. As to the way in which that had been done, they had already been reminded of the miserable history of the Law Courts, which, he thought, might be supplemented by the treatment accorded to Sir Gilbert Scott's design for the Foreign Office. Considerations of economy or taste in high but uninstructed places had interfered with the designs of our architects, and, considering the circumstances, he thought they had done remarkably well. Architecture was really the only art he knew in which the sense of beauty was brought to bear as an essential element and consideration in that which was really the application of the constructive arts to the ordinary necessities of life. Dwellings must be built for men, and they took various forms according to the progress of our civilisation, and these dwellings must be built, not with reference to artistic perfection, but to the interests and desires of those who dwelt in them. The trials and difficulties of the architect's life must be very great. The course of study he had to go through was more complex and difficult than that required for any other art. It involved business capacities as well as artistic powers, capacities which were disregarded and scorned in the more abstract forms of art. What architecture had been to the world it was almost impossible to realise. It had been an education to the world in the love and knowledge of beauty to a greater extent than any of the more abstract arts of painting and sculpture. A piece of sculpture or painting was produced, passed through two or three galleries, and then was carried off to a rich man's house, and was seen no more except by a few of his friends. But architecture, whether in the form of a great public institution or of a private house, was perfect in its design and characteristics, was a pleasure and delight to all who passed by, an education in art to every eye that saw it, and a pattern in artistic virtue to every one who came after and studied it. He passed on to speak on the enormous effect on the world of architecture as applied to religious buildings. In every creed, under every sky, whatever the character of the religion might be, the worshippers who went within the walls of the temple found inspiration in its architecture. The finest examples of architecture to be found in the world of their class were those Indian temples the magnificence of which showed that the architect had been allowed, with almost illimitable resources, completely to work out his plans. But no one who had been into some of the great cathedrals of Europe could doubt for a moment the effect of the architecture upon the worshippers. No one had stood at the door of that wonderful dream of white marble which stood in Milan without being deeply inspired by religious sentiment at the sight of that magnificent triumph of ecclesiastical art devoted to the service of God. Any one who had sat in absolute silence and contemplation in the great cathedral of St. Mark's in Venice, with its wonderful colours of mosaic and marble, must have felt what architecture had been through the centuries gone by, and would still be, if it was true to its mission, in the centuries to come, one of the greatest and noblest teachers, and one of the highest inspirations it was possible for man to have. In conclusion, he coupled the toast with the name of their President, whom, he was glad to know, they had elected to that office a second time. He knew Mr. Fellowes Prynne as one of the most conscientious, sympathetic, instructed, and artistic of those who had devoted themselves to the work that Association desired to promote.

The President, in responding to the toast, said that the Architectural Association was practically the only really systematic society for the education of architects. It was *the* Association that had endeavoured in the past, and would endeavour in the future, to uphold education in architecture. Not only students were members, as they had only 200 students in a membership of 1,300. The others were men who had passed through its ranks and remained in the Association; and, as they knew, Mr. Aston Webb, their past president, and many others who had been presidents and vice-presidents and officers in the Association still remained among its members. Older members of the profession had joined simply to support the educational advantages the Association offered, not for themselves, but to help others. During the past session some most interesting papers had been read. In the one on the "Housing of the Poor" they anticipated something rather dull; but, instead of that, they were extremely interested. He asked the students to keep up their enthusiasm, and not to let it slacken as the session went on. Enthusiasm was the life of their work.

Mr. Beresford Pite then gave the health of "The Guests," coupled with the names of Mr. J. C. Preston, Master of the Carpenters' Company, Alderman Hind, Master of the Plumbers' Company, and Mr. Reginald Blomfield. He expressed the gratitude of architects to the Carpenters' and Plumbers' Companies for having taken in hand the education of the crafts with which they were connected. It was well that an occasion like that was provided for bringing architectural students in contact with the criticism of the outside world. Nothing would further the interests of architecture more than practical criticism like that which had been given them by the Archdeacon of London and Sir Henry Howorth. It was exceedingly difficult, struggling with the business problems of life and the technical questions which claimed their attention, to live in that ideal atmosphere necessary for the production of a great work of art. Such sympathetic criticism as was elicited by the Cathedral at Milan, or St. Mark's at Venice, was criticism that took stock of the whole work of an age. Each of these buildings was the production of an era, the concentration of the art of a world. How was the student, amid the cares of dealing with the builder and the County Council, to live in that atmosphere which only the most transcendental philosophy could provide him with? They had an illustration of what might be the effect in the works of Ruskin. Ruskin set himself to analyse the charms which he felt at Venice, and the result was wholly disastrous to English architecture. The result of "The Stones of Venice" was the erection of the Oxford Museum which evoked a chorus of admiration, but which had now become a mere laughing stock. They had to read Ruskin carefully before they could even understand the motive underlying such a building, yet it was built in this nineteenth century by a nineteenth century architect. It was exotic, an illustration of the application of Venetian philosophy to the English life of to-day.

Alderman Hind, in responding, said that in past years architects had often been caused much trouble by the carelessness and ignorance of the workmen in the plumbing trades. He was glad to believe that now to a large extent they got good work and a knowledge on the part of the workmen of the requirements of the times.

Mr. Reginald Blomfield also responded, and said that the Association was the best of the educational bodies dealing with architecture, and had pursued its work without any great help from outside sources for over fifty years. He hoped that it would add to its services by leading young architects to go in for a plain, simple, masculine style of work.

Mr. F. T. W. Goldsmith then proposed the health of the lecturers and instructors, and the committee and officers of the Association, Mr. H. A. Satchell and Mr. E. Howley Sim responding. The last toast was that of the President-elect proposed by Mr. W. H. Seth Smith.

APPLICATIONS UNDER THE LONDON BUILDING ACT, 1894.

AT the meeting of the Building Act Committee of the London County Council held on May 15, being the day before the Council adjourned for the Whitsuntide recess, the proceedings were governed by the clause in the order of reference which empowers the Committee at certain seasons to act on behalf of the Council in relation to matters included in the order of reference. The following applications under the London Building Act, 1894, were considered. Those applications to which consent has been given are granted on certain conditions.*

Lines of Frontage.

Chelsea.—Buildings upon plots 1 to 4, Cheyne-walk, Chelsea, to abut upon Beaufort-street (Messrs. Lethaby & Troup for the Town and Gown Association, Limited, Edinburgh).—Consent.

Hampstead.—The retention of bay windows in front of Nos. 79 and 81, Greencroft Gardens, Hampstead (Mr. W. H. Cove).—Consent.

Hampstead.—A porch at the side of a building in course of erection on the north side of Frognal-lane, Hampstead, to abut upon Chesterford Gardens (Mr. E. Michael).—Consent.

Islington, North.—A one-story shop on a portion of the forecourt of No. 121, Stroud Green-road, Islington (Mr. F. L. Pither for Mrs. Blankley).—Consent.

Kensington, South.—A tile-covered wooden hood over the entrance to No. 64, Holland Park-avenue, Kensington (Mr H. E. Rossiter for Mr. F. P. Wilson).—Consent.

Lewisham.—Bay windows to seven houses on the west side and seven houses on the east side of Broadfield-road, and also to six houses on the west side of Well-meadow-road, St. Germain's Estate,

* Names of applicants are given in brackets. Buildings are new erections unless otherwise stated.

Hither Green, Lewisham (Mr. G. F. Logsdail for Mr. A. Cameron Corbett, M.P.).—Consent.

Norwood.—A one-story entrance lobby to the "King's Head" public-house, No. 82, High-street, West Norwood (Messrs. Witherington & Hogwood for the New Phœnix Brewery Company, Limited).—Consent.

Norwood.—A building on the site of No. 202, Knight's Hill-road, West Norwood (Mr. C. F. Thwaite).—Consent.

Westminster.—A two-story oriel window at the "Old Red Lion" public-house, No. 48, Parliament-street, Westminster, to abut upon Derby-street (Messrs. Gardiner & Theobald for Mrs. Smith).—Consent.

Brixton.—Re-building of Christ Church, Brixton-road, Brixton, at the corner of Chapel-street (Mr. Beresford Pite for the vicar and churchwardens).—Refused.

Clapham.—A one-story shop on part of the forecourt of No. 103, Clapham Park-road, Clapham (Mr. J. M. Cable for Mr. T. F. Roper).—Refused.

Greenwich.—A one-story building upon the yard at the rear of No. 238, Woolwich-road, Greenwich, to abut upon Dupree-road (Messrs. J. Davey & Co. for Mr. H. Panter).—Refused.

Marylebone, West.—A one-story addition upon the yard on the east side of "The Yorkshire Stingo" public-house, No. 183, Marylebone-road, St. Marylebone (Mr. W. Pywell for Mr. S. Brown).—Refused.

St. Pancras, West.—A building on the north side of Hawley-crescent, St. Pancras, at the corner of Kentish Town-road (Messrs. W. Bradford & Sons for the Camden Brewery Company, Limited).—Refused.

Westminster.—Three iron and glass shelters at the entrances to Wellington Chambers, York-street, Westminster (Mr. G. Simpson for Mr. C. V. Houssart).—Refused.

Woolwich.—A one-story addition in front of the "Barrack Tavern" public-house, Woolwich Common, Woolwich (Messrs. Dear & Winder for Mr. T. Bond).—Refused.

Width of Way.

Paddington, South.—A fives-court at the rear of Nos. 10 and 11, Orme-square, Bayswater, at less than the prescribed distance from the centre of St. Petersburgh-place (Messrs. C. Saunders & Son for Mr. H. Wilkinson).—Consent.

Southwark, West.—A building on part of the yard in front of No. 17, Bankside, Southwark, adjoining Southwark Bridge (Messrs. Fowler & Hall for Messrs. Beck & Pollitzer).—Consent.

Whitechapel.—A warehouse on the west side of Tenter-street West, Whitechapel (Messrs. Dunk and Bousfield for Mr. S. Moses).—Consent.

Camberwell, North.—A two-story factory on the north side of Bullace-row, Camberwell-road, Camberwell (Mr. E. J. Strevens for Mr. Wolsey).—Refused.

St. George, Hanover-square.—A projecting oriel window to abut upon Grafton-street, and a porch to abut upon Hay Hill, to a proposed building upon the site of Nos. 1 and 2, Grafton-street, St. George, Hanover-square, at the corner of Hay Hill (Messrs. Boehmer & Gibbs).—Refused.

Southwark, West.—A building on the north side of Old Barge-house-street, Blackfriars (Mr. W. C. Jones for the Thames Bank Iron Company).—Refused.

Space at Rear.

Deptford.—A building on a portion of the open space at the rear of the "New Cross Inn" public-house, No. 323, New Cross-road, at the corner of Clifton Hill, Deptford (Messrs. Eedle & Meyers for Mr. W. G. Wrigglesworth).—Consent.

Deviation from Certified Plans.

Strand.—Certain deviations from the plans certified by the District Surveyor, under Section 43 of the London Building Act, 1894, so far as relates to the proposed rebuilding of the "Golden Lion" public-house, No. 25, King-street, St. James, Westminster (Messrs. F. J. Eedle & Meyers for Messrs. Ferris & Co.).—Consent.

St. George, Hanover-square.—That Messrs. Bird & Walters be informed, with respect to their communication, purporting to be an application under Section 43 of the London Building Act, 1894, for sanction to deviations from the plans certified by the District Surveyor, so far as relates to proposed alterations to the "Coach and Horses" public-house, No. 5, Hill-street, Berkeley-square, St. George, Hanover-square, that having regard to the fact that it is not proposed to erect a building but to alter an existing one, the matter is one which, the Council is advised, cannot be the subject of an application under Section 43, and that the Council has accordingly neither considered their communication as an application nor given any decision thereon.—Agreed.

Lines of Frontage and Width of Way.

Hoxton.—A building on the west side of City-road, Hoxton, between Baldwin-street and Brunswick-yard (Messrs. M. W. King & Son for the Trustees of the Alexandra Trust).—Consent.

Lewisham.—A one-story shop upon the forecourt of No. 4, The Chestnuts, Bell Green, Lower Sydenham (Messrs. A. Black & Son for Mrs. W. Banham).—Consent.

Marylebone, East.—That the application of Messrs. Leggatt, Rubinstein, & Co. for an extension of the period within which the erection of an iron and glass shelter at Queen's Hall, Langham-place, St. Marylebone, at the corner of Ridinghouse-street, was required to be commenced, be granted, upon condition that the shelter referred to be commenced within twelve months from November 15, 1898.—Agreed.

Marylebone, West.—One-story addition in front of the coach-house at No. 14, Montagu-square, St. Marylebone, to abut upon Gloucester-mews, West (Mr F. W. Foster for Mr. H. S. Willis).—Consent.

Line of Frontage and Deviation from Certified Plans.

Camberwell, North.—A porch at the entrance to a building on the site of Nos. 45 and 47, Albany-road, Camberwell, and certain deviations from the plans certified by the District Surveyor under Section 43 of the London Building Act, 1894, so far as relates to the erection of such building (Mr. A. J. Perriam for the North Camberwell Radical Club and Institute).—Consent.

Lines of Frontage, Width of Way, and Space at Rear.

Wandsworth.—That the Council, in the exercise of its powers under Sections 13 and 22 of the London Building Act, 1894, do not consent to the frontage and position of three blocks of proposed residential flats, two of such blocks on the south side of Oldridge-road, and one block on the east side of Lochinvar-street, Balham, at the corner of Hollygrove, with the forecourt boundary at less than the prescribed distance from the centre of the latter street, and that the Council, under Section 41 of the 1894 Building Act, do not allow or sanction the erection of such blocks of flats with open spaces at the rear and portions to extend above the diagonal line as directed by the Act to be drawn (Mr. H. F. Williams for Mr. G. Treeves).—Agreed.

Islington, North.—That the Council, in the exercise of its powers under Sections 13 and 22 of the London Building Act, 1894, do not consent to the position and frontage of twenty-two four-story houses, with shops on the ground floor, and of one-story shops in front of two houses on the north-east side of Archway-road, Holloway, with the flanks of two of the proposed four-story houses to abut upon a footpath leading from Archway-road to Hornsey-lane, and the flanks of one other four-story house and of one of the one-story shops to abut upon a footpath leading to Alpha-villas; and that the Council, under Section 41 of that Act, do not allow the erection of eight of such houses without an open space at the rear (Mr. C. J. Bentley for Mr. J. C. Hill).—Agreed.

Lines of Frontage and Construction.

Rotherhithe. — A steel gangway across Shad Thames, Rotherhithe, to connect Bengal Wharf with a warehouse on the opposite side of that street, and also of two wood and iron lookums at the fourth-floor level of such warehouse, overhanging St. Saviour's Dock (Messrs. Garbutt & Co., Limited).—Consent.

Islington, East.—Advertisement boards on top of the open wooden fence and party fence walls, inclosing the forecourt of Nos. 4, 5, 6, 7, 8, 9, and 10, Kingsland-green, Dalston (Mr. J. Webster for Messrs. J. Gliksten & Son).—Refused.

Buildings for the Supply of Electricity.

Hammersmith.—That the Council do not approve of the plans submitted with the application of Mr. H. Mair on behalf of the Vestry of Hammersmith, for the construction of an addition to the Vestry's electric generating station and works, Fulham Palace-road, Hammersmith, and that the Council also do not authorise the erection of such addition.—Agreed.

Formation of Streets.

Finsbury, Central.—That an order be issued to Messrs. Vigers & Co., sanctioning the formation or laying out of a new street for carriage traffic to lead out of Alexandra Park-road, Muswell Hill, Clerkenwell (detached). (for the London and Middlesex Freehold Estates Company, Limited). That the name Curzon-road be approved for the new street.—Agreed.

Working-class Dwellings.

Islington, North.—That the Council do make an order as follows—Whereas Mr. Alfred Tosh . . . under the provisions of Section 42 of the London Building Act, 1894, delivered, on behalf of Mr. D. Devant, at the County Hall, plans of four blocks of intended dwelling-houses to be inhabited by persons of the working class, and proposed to be erected, not abutting upon a street, on a site at the rear of houses on the east side of St. John's-road, Upper Holloway, Islington . . . Now the Council does by this order disapprove of, and refuse to sanction, the said plans.—Agreed.

ALTAR TABLE, ST. ANDREW'S CHURCH, LINCOLN.—An altar table of oak has just been placed in St. Andrew's Church, Lincoln. The work was carried out by Mr. S. C. Basker, the carving having been executed by Mr. A. J. Tuttell. The architect was Mr. Pratt, of Nottingham.

Arabesque Decoration, Princes Restaurant.—By Mr. H. C. Brewer.

ARABESQUE DECORATION.

THIS small illustration represents one of the arabesque panels painted by Mr. H. C. Brewer at the Princes Restaurant. As we are giving in our plates of this week Mr. Brewer's decorations for a theatre, we add this as another specimen of his work.

Illustrations.

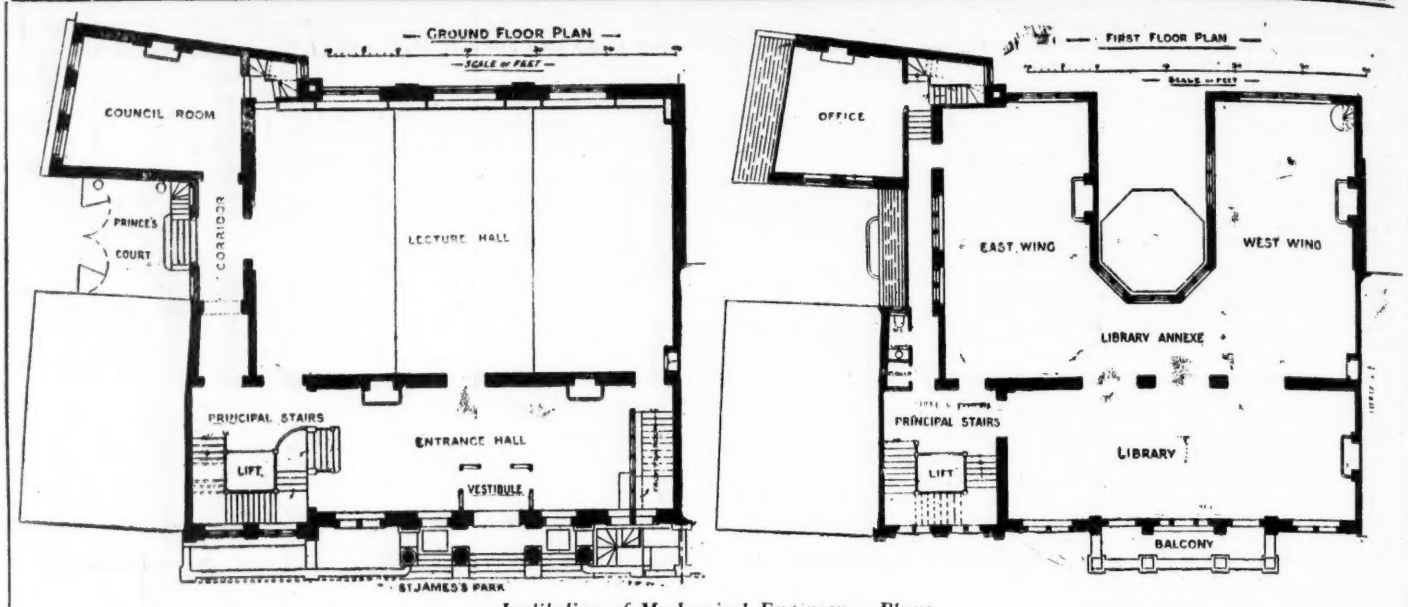
DECORATIONS OF THE NEW PALACE THEATRE, PLYMOUTH.

ALTHOUGH these interesting examples of modern theatre decoration were quite recently executed, they are now no more, the new Palace Theatre at Plymouth, designed by Messrs. Wimperis and Arber, in which they were painted, having been destroyed by fire in December last. As the designs represent a very meritorious effort to give special point and interest to the decorations of a theatre, in connexion with the associations of the locality, we are glad to have an opportunity of preserving a record of them in our illustration pages.

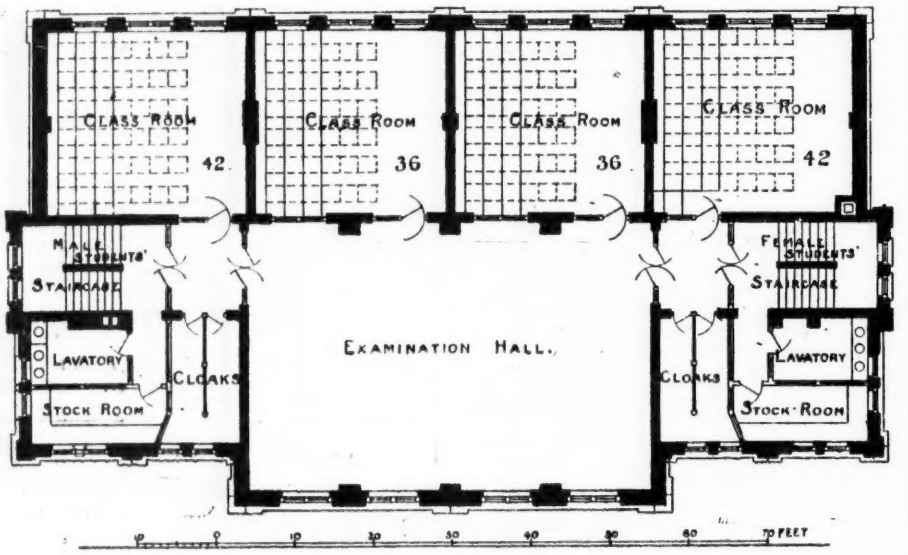
The artist is Mr. H. C. Brewer, the son of Mr. H. W. Brewer, whose architectural drawings and conceptions are so well known to our readers. The following is Mr. Brewer's description of the work:—

"These decorations were carried out to attract a local audience, whose interest was mainly connected with the British Navy. The four larger panels in the dome represent the chief battles of the Navy. Facing the audience was 'The Destruction of the Spanish Armada;' on either side of it 'Lord Howe's Victory of the First of June' and 'The Battle of Trafalgar;' and 'Blake's Victory over Van Tromp' filled the fourth panel. The smaller panels represented '*The Great Harry*,' first great battleship of the Navy; '*The Victory*,' most famous ship of the Navy; '*The Majestic*,' one of the latest ironclads; and '*The Sancta Maria*,' the ship in which Columbus discovered America.

The frieze above the proscenium arch repre-



Institution of Mechanical Engineers. Plans.



Finsbury Pupil Teachers' Centre. Plan.

sents Queen Elizabeth knighting Drake, surrounded by the chief military and literary men of the period. Two Elizabethan ships filled the panels at either end of the frieze. These panels were carefully studied from an antiquarian point of view. They were executed on canvas prepared with an absorbent ground of zinc white, and were painted with a medium composed of copal, spirit, and wax. This medium gave them an absolutely smooth surface on which the dust could not settle, and which was capable of being repeatedly washed. The canvas was fixed on a surface of white lead mixed with varnish, which protected it from any injurious effect of the plaster. It had to be fixed immediately the plaster was set.

The effect of the dome was greatly added to by the absence of the usual centre chandelier, the light being obtained by a row of electric lights placed on the ledge of the cornice, thus brilliantly lighting the dome without the source of light being visible."

THE INSTITUTION OF MECHANICAL ENGINEERS.

THE house has been about two years in building. The façade, as illustrated, overlooks St. James's Park, towards the Horse Guards' Parade, the Foreign Office, and new Admiralty Buildings. Brown Portland stone and Midland red pressed brick facings are used on the front. The foundations stand in running water, about 22 ft. below the pavement, and some trouble was experienced in laying them; the concrete walls are 7 ft. thick, and the basement floor is laid "table-top" fashion on the top, like an inverted tank, circulation of the water throughout being provided for with terra-cotta pipes laid in the concrete walls.

The interior is treated generally with Hungarian oak and fibrous plaster enriched ceilings. The special features of the building are the lecture hall, with its ceiling hung clear of the walls for acoustic purposes, and the false floor which can be arranged in tiers for lectures or in one level. The tea-room, for which a basement floor is utilised, is treated with light and rich-coloured marbles, Mexican oynx-cippolino, antique Sienna and white statuary. The library, shown in the illustration, has light oak bookcases of Elizabethan style. The "plenum" system is adopted for the ventilation of the principal rooms. The building is lit by electricity, the same agent being used for working lifts, clocks, ventilation fans, and power for working exhibition models.

Messrs. Lawrance & Sons, of Wharf-road, City-road, N., were the contractors; Mr. William Winteringham being the clerk of works; Messrs. Patteson, of Manchester, were the marble contractors; and Messrs. Hardman & Powell, of Birmingham and London, the firm carrying out the ornamental iron and metal finishings generally. The fibrous plaster ceilings are by Mr. Gilbert Seale, of Camberwell, and Messrs. Jackson & Sons, of Rathbone-place. Mr. Middleton, of Westminster, carried out the electric installation under Mr. Edward de Segundo, consulting electrical expert. The lifts are by the Otis Elevator Company, of London.

The architect is Mr. Basil Slade.

FINSBURY PUPIL TEACHERS' CENTRE.

THE Finsbury Pupil Teachers' Centre, to be erected in the Offord-road, Islington, N., will provide accommodation for 312 students, including eight class-rooms, central examination hall, gymnasium with dressing-rooms, drawing class-room, modelling room, chemical and physical laboratories with dark room and chemical stores, lecture room, teachers' private rooms, lavatories, stock and cloak rooms.

The walls will be faced externally with red bricks and buff terra-cotta dressings, and roofed with deep strawberry-coloured Broseley tiles.

The architect is Mr. T. J. Bailey, Architect to the School Board for London.

AN OLD FOLKS' HOME, HITCHIN, HERTS.

THIS building has been erected by Mr. F. W. Phillips, of Hitchin, for the accommodation of certain widows and old men. It contains eight sets of rooms arranged on two floors. The living-rooms have each a cupboard scullery, fitted with shelves and racks, and ventilated by its own window; and over the ceilings of these sculleries end light and ventilation is obtained for the corridors.

A washhouse, water-closets, and coal-sheds are provided in the drying-ground and garden at the back of the site, approached by a length of covered way.

The walling is of brick, faced with rough-cast from the ground-floor sills upwards. Below these is a red brick plinth, built hollow. The projecting gable ends are finished with lime plastering, arranged in panels filled with scratched patterns, as seen in old cottages in the neighbourhood. The builders were Messrs. Matthew Foster & Co., of Hitchin, and the architect Mr. Walter Millard. The drawing is by Mr. F. L. Griggs.

NEW POST-OFFICE, BROADWAY, WORCESTERSHIRE.

AN endeavour has been made to keep this post-office, which is now being built in the main street of Broadway, as quiet and unobtrusive as possible and in harmony with the rest of the buildings in this unique country village. No attempt has been made to impart an official character to it, or to emphasise its purpose in any way.

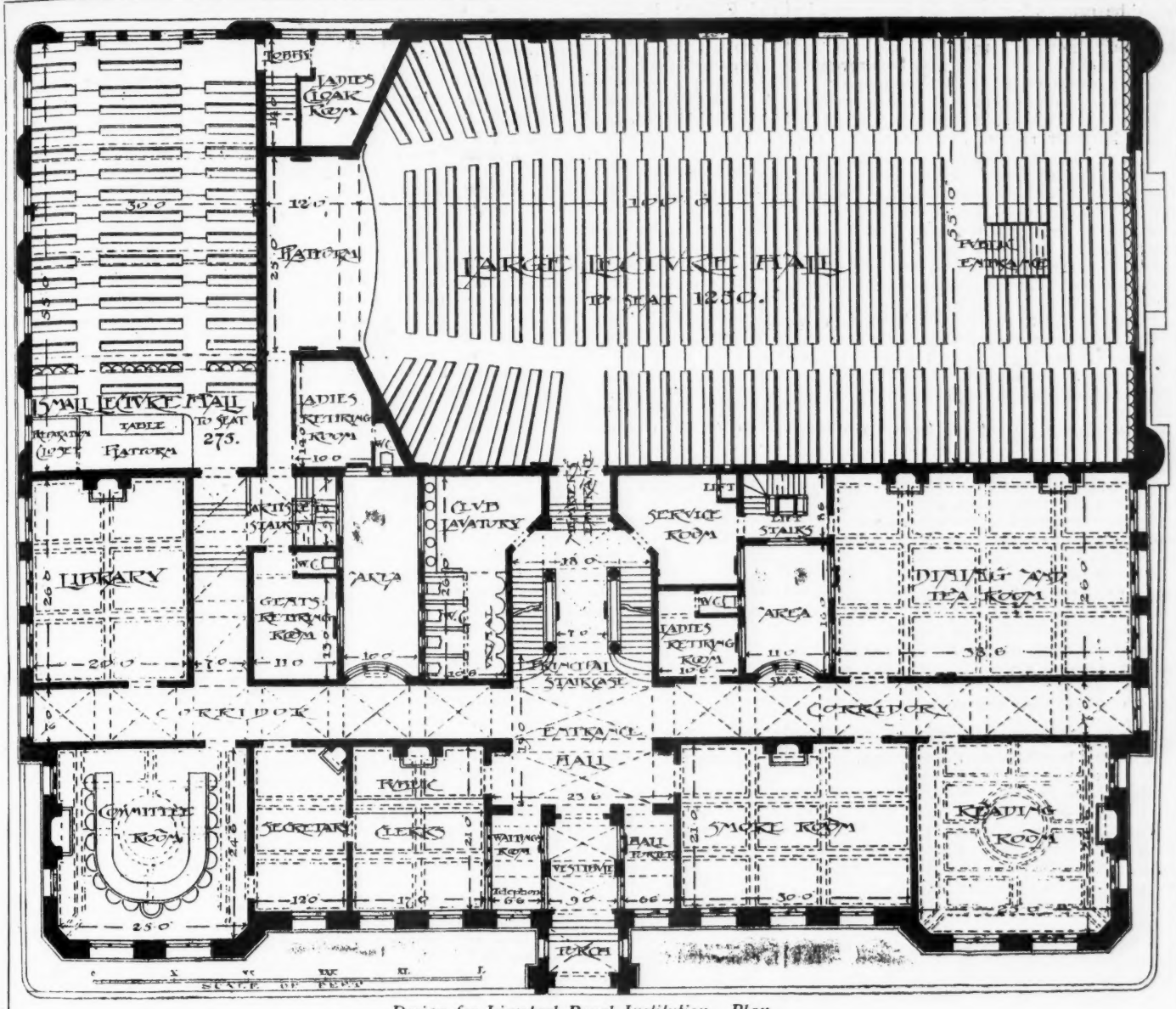
The architects are Messrs. E. Guy Dawber & Whitwell, of London, and the builders, Messrs. Espley & Co., of Evesham.

The drawing is exhibited at the Royal Academy.

COMPETITION DESIGN FOR ROYAL INSTITUTION, LIVERPOOL.

THE Liverpool Royal Institution is the home of a number of learned societies, in which they hold various meetings and classes, and in addition the new scheme will include club accommodation for the various members.

The most important feature of this competition was to provide for a large lecture hall, to seat 1,250, by only pulling down part of the existing premises, and leaving the remainder intact for present purposes. The plan shows the arrangement of the ground floor proposed in this design. On the first floor are five meeting rooms for various scientific societies, arranged *en suite* for receptions, and two lecture rooms and a music room for practice,



Design for Liverpool Royal Institution. Plan.

detached by an annexe; art galleries and museum being arranged on the second floor, which also contains caretaker's quarters. The cloak-rooms and entrance to large lecture hall are arranged under part of the lecture hall, and are approached from Seel-street. Entrances are also provided from the Institute itself, and from Parr-street for artistes, &c., on musical occasions. An emergency exit is arranged into Back Colquit-street.

In the basement is an examination hall and six class-rooms, well lighted by taking advantage of the fall of the ground.

The requirements issued by the Committee were extremely vague, and consequently the plans submitted varied to a considerable extent.

The author of this design, which obtained the second premium in the competition, is Mr. R. W. Bedingfield, of Leicester.

BOOKS RECEIVED.

ANIMALS IN MOTION: An electro-photographic investigation of consecutive phases of animal progressive movements. By Eadweard Muybridge (Chapman & Hall.)

TRANSACTIONS OF THE SOCIETY OF ENGINEERS FOR 1898. Edited by G. A. Pryce Cuxson, Secretary. (E. & F. N. Spon.)

AUTHORITY AND ARCHÆOLOGY, SACRED AND PROFANE. Essays on the Relation of Monuments to Biblical and Classical Literature. Edited by David G. Hogarth. (John Murray.)

NEW CHAPEL, NETHERFIELD, NOTTINGHAMSHIRE.—The jubilee year of the Notts Baptist Preachers' Association was signalised on the 22nd ult. by the laying of a memorial stone and six foundation stones in connexion with the new chapel which is being erected at Netherfield at a cost of 1,200*l*. Accommodation is being provided for about 400 worshippers. The length of the structure is 55 ft. and the width 41 ft. Mr. W. H. Higginbottom, of Nottingham, is the architect, and Mr. J. Lewin, of Netherfield, the builder.

The Student's Column.

ARCHITECTURAL HYGIENE.

XX.—VENTILATION AND HEATING SCHEMES.

a. Cottages.
b. Houses.
c. Churches.
d. Schools (class-rooms).
e. Hall (open timbered roof).
f. Large Hall (with flat ceiling).
g. Hospitals.
h. Theatres.
j. Picture Galleries.
k. A Chapel with gallery round three sides.
l. A Billiard-room.

(*a*) COTTAGES.

IT is notorious that people who live an open air life are content to live in very stuffy rooms. The ordinary cottager is well known to have these views, and even if architects provide air bricks or tubes, they are immediately blocked up. This is really very natural because small rooms are specially difficult to ventilate without draught, and, of course, expense would prevent any scheme of ventilation other than a natural one being employed. The open fireplace then is, as a rule, the sole agent, but occasionally a ventilating fireplace of the Galton pattern (as already described and illustrated) is employed, or if not, then a Teale fireplace with economiser grate, may be used, as less draughts are likely to occur with these.

The upper rooms may be kept at an equable temperature, by the use of ventilating fanlights over the internal doors; the chimney acting as an extract.

(*b*) HOUSES.

So much depends upon the size of the house and the money which the owner can afford to expend on ventilation that it is difficult to lay down more than general rules.

Firstly, as to the *Hall and Staircase.*—An improperly warmed and ventilated staircase is the cause of draughts and chill.

The best way to effect this is by means of hot-water coils placed so that the incoming air from the front door may be warmed, and so that the large amount of air in a hall and staircase may not be at a much lower temperature than the air of the rooms themselves. Fresh warmed air can be introduced over this coil. By properly heating this portion of the house, all the rooms abutting thereon are rendered more habitable, especially in cold weather, as the warmed air enters them and finds an exit in their fireplaces.

Again, when sitting-room doors are opened a cold blast of air does not penetrate and cause colds and coughs. The great secret of a warmed and ventilated house lies in thoroughly attending to the hall and staircase, and no system will be found complete until this is taken in hand. An exit for foul air should be provided wherever possible into an air flue in the upper part of house, or by means of a lantern light fitted with extract coil. In this case, it is best to create an up current and thus prevent a down draught by placing a coil of water pipes as a lining to the lantern.

The air in the hall and living rooms should be as nearly as possible of the same temperature, if draughts are to be prevented, and to keep the air of the house pure and sweet both will intermingle with advantage. If warmed air is introduced into the hall, and fanlights are arranged above the doors of the rooms, a continual stream of warmed fresh air is supplied to the house.

As regards *kitchen, scullery, and offices,* and rooms containing sanitary fittings, and cellars, however, we should have another object in view, and that is to disconnect these as much as possible from the living portion.

We have endeavoured to show this in our article on "planning."

As to the kitchen, if possible, cross ventilation

should be provided, so that the fumes may be dispersed as soon as possible, and a cross ventilating corridor should always be so planned that kitchen smells may be prevented from entering the living part of the house.

As to the lavatories and water-closets an ideal arrangement is that which obtains in hospitals. This is, however, rarely done, and it is doubtful if it is always necessary. The usual way is to place the lavatory, which may also form a cloak-room, so as to be entered from the hall, and this in itself forms a disconnecting lobby; it should be provided, if possible, with two windows, so that "through" or "cross" ventilation may be obtained, and therefore effective disconnexion of the water-closet from the main portion of the house. In order to ventilate the water-closet itself, louvres, or a grating, may be placed in the lower part of the door connecting it with the lavatory, so that air may be allowed to enter from the lobby and escape through the water-closet window.

Cellars should be cut off from the living portion of the house by cross ventilating lobbies. This is necessary in order that the damp, cold air may not be drawn into the house, and that the dust from coal-cellars and underground passages, the fumes from water-closets, and decaying matter from dust-bins and refuse may not be drawn up by the warm house air.

Bedrooms.—Every bedroom should, of course, have a fireplace, and the inlet to the flue should always be kept open, so that a current of air may always be travelling up the flue.

The old form of grate, with a register which can be shut down should be avoided, as ignorant people seem very fond of shutting this, in which case the bedroom becomes a mere box without outlet. A bedroom in which the register is pulled down is almost certain to produce a headache by the morning.

People who desire to be healthy have their windows open an inch or so all the year round; but if this is objected to, a ventilating grating over the doorway should be provided, so that the fresh air admitted to the hall, after being warmed by the radiator, can pass through the bedrooms and so up the fireplaces.

(*c*) CHURCHES.

In this class of building 500 ft. per hour per person may be taken as a standard. The motive power for the extract may be produced either by a shaft in the tower, which may be heated by a coke furnace or gas, or by a fan worked by a gas engine. The inlet of fresh air may be introduced at different points over hot-water radiators, or by air which passes through a chamber filled with hot water pipes and delivered to various points in the church. Hot-water piping, either raised above the floor on the outside walls or in channels below the floor when placed in aisles, are also used. Extracts can be taken into the roof at various points, and either led into the tower shaft, or aided by gas or a hot-water or steam coil to find its exit in an extract ventilator.

In lofty churches with clearstories the windows may be in two thicknesses of glass, and very often a hot water flow and return can be carried round at the clearstory level, which will warm the air at this cold part and prevent the down draught, which is so objectionable.

(*d*) SCHOOLS.

This type of building is one of the most important as one of the most difficult to ventilate.

Important, because if properly ventilated, it prevents the spread of infectious diseases and increases the working power of the students and teachers, and keeps them in better health and spirits.

Difficult, because of the number and different sizes of the class-rooms, the number of students in each, the varying length of time for which each is used. The various positions of the different class-rooms must be also taken into account, as, for instance, a room with a southern temperature requires less heat than one exposed to a north-east aspect.

The system, therefore, that appeals to us is one in which each room can be independently kept at a required temperature. The idiosyncrasies of masters has also to be taken into account; these should only be allowed play within a certain limit.

The Education Department requires fresh-air inlets equal to 2½ square inches per scholar, and outlets equal to 2 square inches per scholar, in addition to the fireplace chimney.

In Mr. Robins's work on "Technical School and College Building," a careful survey is made of the ventilation arrangements of recent schools.

The three methods are :—

1. Supply from one large heating chamber.
2. Supply from separate heating chambers.
3. Supply from cased coils in the rooms.

Whichever system is adopted, a separate heating surface giving radiation to each room should be adopted.

An example of a school recently erected is given as an illustration of heating from one chamber by means of hot-water pipes and radiators, and an extract flue heated by carrying up the iron smoke pipe from the boiler in a brick flue, which thus is heated to act as an exhaust for the vitiated air of the class-room, which is led into it by brick ducts.

In this case (figs. 248 and 249) the class-rooms are warmed by means of one ventilating radiator fixed in each class-room over a 2-in. cast-iron circulating pipe as shown in the drawing. Fresh air is admitted to these radiators by two 9 in. by 6 in. cast-iron galvanised fresh-air inlet gratings, with regulating gratings at the back of each radiator, so that after being warmed it enters the room. Each radiator is fixed above the circulating main and fitted with regulating valve and unions, so that each class-room can be regulated or shut off as required by the master in charge, with the exception of the circulating-pipe at the skirting level. The passages are warmed in a similar way. The heating apparatus is worked from a boiler fixed in the basement where shown on plan. As to the ventilation, it was considered necessary to change the air of the class-rooms three times an hour. The up-cast flue-pipe from the boiler acts as the extracting power. This is enclosed in a brick air-trunk 2 ft. 6 in. square, and the vitiated air from the class-rooms is introduced into this space round the flue-pipe, and the up-current is started by the heated surface of the flue-pipe. The exit of foul air from the class-rooms is led by means of a cast-iron extraction-grating at the high-level and of different sectional areas to each class, because of its length from the up-cast flue. The foul air descends by brick flues in the corner of each room into a brick channel formed into the floor of the passage, 2 ft. 6 in. by 2 ft. in the clear. This vitiated air-channel is connected with the up-cast flue as shown.

In the summer, when the heating apparatus will not be working, an open-fire coke stove placed next to the boiler in the basement and with flue taken into the cast-iron flue pipe, is kept going, so that the vitiated air trunk is always heated and the attraction formed in the ventilating flues winter and summer.

As to the practical working, one of the end class-rooms is taken, as being the most difficult to heat :—

Heating.

Cubic contents of class-room 24 ft. × 17 ft. × 12 ft. = 4,896 cubic feet.

Change air three times per hour = 4,896 × 3 = 14,688 cubic feet.

1 heat unit will raise 55 cubic feet one degree $\frac{14,688}{55} = 267$ heat units.

Glass Surface.

Two windows about 5 ft. × 3 ft. 11 in. = say, 39 square feet.

1 square foot of glass requires $\frac{92}{100}$ heat units $= 39 \times \frac{92}{100} = 36$.

Wall Surface (outside only).

One side wall 24 ft. × 12 ft. =	288 square feet.
One end wall 17 ft. × 12 ft. =	204 "
	453

1 square foot of wall surface requires $\frac{3}{10}$ heat unit.

$$\therefore 453 \times \frac{3}{10} = \frac{136}{439}$$

∴ 439 heat units required per degree difference 60 deg. internally when at 32 deg. externally = difference = 28 deg.

∴ 439 × 28 = 12,292 heat units.

1 ft. super of hot water surface gives off 175 heat units.

∴ 12,292 ÷ 175 = 70 ft. super. of hot-water surface required.

One radiator	= 50 ft. super.
42 ft. of 2 in. pipe	= 21 ft. super.
Total feet super of hot-water surface in room	..... 71 ft. super.

Ventilation.—Cubic contents 4,896 × 3 times per hour = 14,688.

Velocity of extract = 6 ft. per second = 21,600 ft. per hour; 14,688 ÷ 21,600 = ·68 square feet outlet required (·68 of square foot = 108 square inches).

Class-room nearest to the shaft has outlet 12 in. × 9 in.

Class-room furthest from the shaft has outlet 18 in. × 12 in.

Amount of air per hour for each pupil $= \frac{14,688}{30} = 489$ cubic feet.

Thirty pupils would be the limit that should be allowed in the room, as a rule not more than twenty to twenty-five should be present.

Messrs. Rosser & Russell, of London, were the engineers who carried out this scheme.

(*e*) A LARGE HALL.

Fig. 250 is an example of a large hall for public meetings, &c. It is 83 ft. long by 42 ft. wide, and is covered with an open-timber roof, the tie-beam of which is 20 ft. from the floor (fig. 251).

The heating was effected by a boiler of sufficient size in the basement. From this boiler a 3 in. flow and return main was carried to serve the hall and staircases, as shown on the plans. It is carried round the hall at the floor level. The hall itself is warmed with powerful hot-water ventilating radiators, each 46 in. long, 8¾ in. wide, and 37 in. high, fitted with connexions to the flow and return pipe, so as to be entirely under control. The ventilation is effected by means of 18 in. by 12 in. fresh-air inlets placed behind the ventilating radiators. External air bricks and internal hit-and-miss regulating gratings being supplied for each, the extract being by a powerful exhaust ventilator fitted at the ridge level.

The following are the calculations :—

Heating.

Cubic contents 83 ft. × 42 ft. × 30 ft. = 104,580 cubic feet.

Change air once per hour.

1 heat unit will raise 55 cubic feet. 1 deg.

	Heat Units.
∴ 104,580 ÷ 55 =	... 1,902

Glass.	sq. ft.
Ten windows 4 ft. 6 in. wide and 8 ft. high	360
Two windows 14 ft. wide and 14 ft. high	392
	752

1 square foot of glass requires $\frac{92}{100}$ heat units.

$$752 \times \frac{92}{100} = \ldots \quad 692$$

Wall Surface and Roof.

Sides 83 × 50 × 2 =	8,300
Ends 42 × 30 × 2 =	2,500
	10,820
Deduct glass	752
	10,068

1 square foot requires $\frac{3}{10}$ heat units.

$$10,068 \times \frac{3}{10} = \ldots \quad 3,018$$

5,612

5,612 heat units required per each degree of internal and external difference: 55 deg. internally when 30 deg. externally = 25 deg. difference.

$$5,612 \times 25 = 140,300$$

1 ft. super H.W. surface gives off 175 heat units.

140,300 ÷ 175 = 800 sq. ft. heating surface.

188 ft. run 3 in. pipe = 165 ft. sup.

6 radiators at 106 ft. = 636

801 sq. ft. of heating surface.

Ventilation :

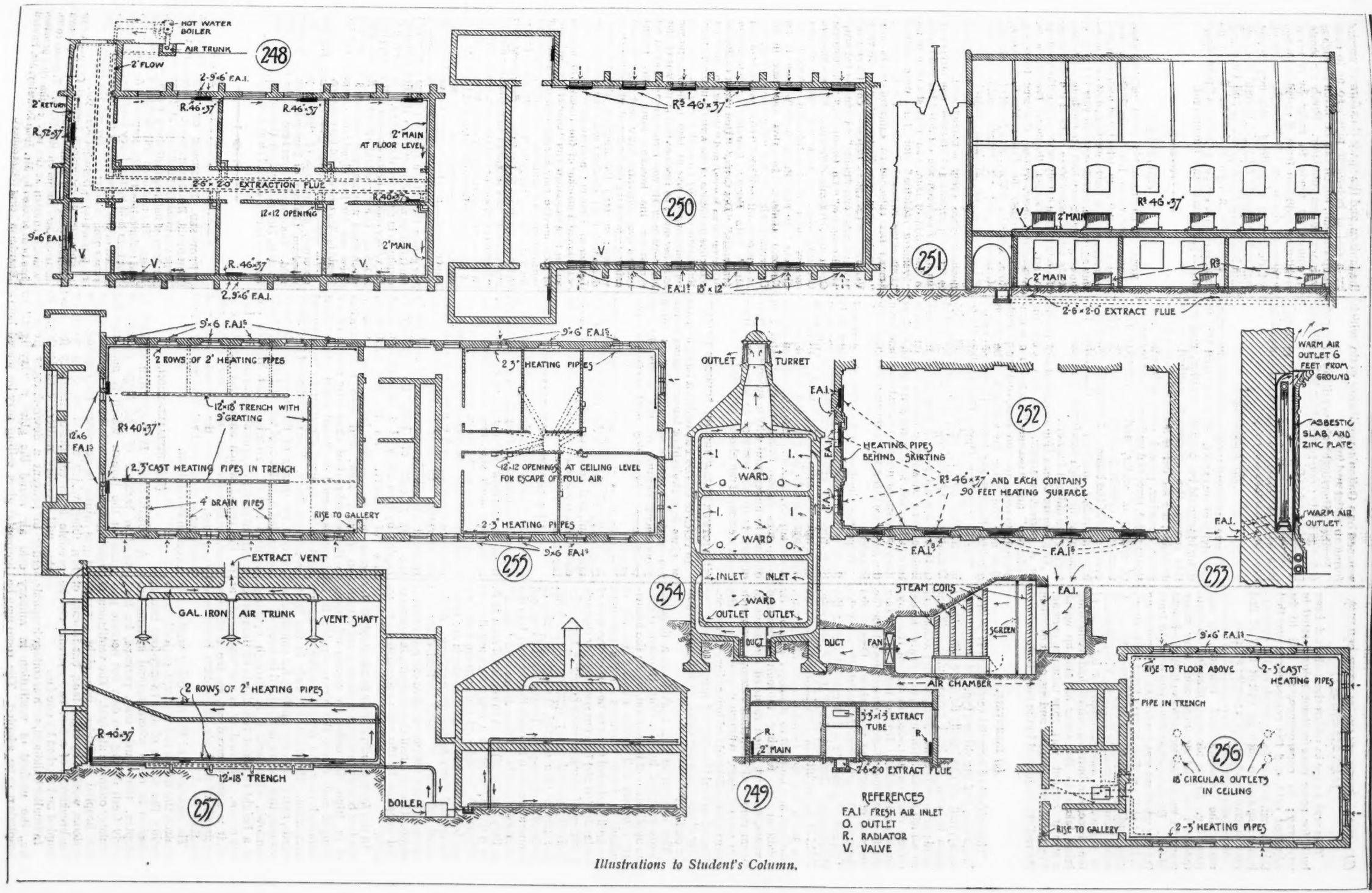
Cubic contents, 104,580.

Velocity of extract 6 ft. per second = 21,600 per hour.

$$104,580 \div 21,600 = 5 \text{ sq. ft.}$$

One extract ventilator 32 in. diameter (extract) = 5·5 sq. ft.

Six 18 in. × 12 in. at ⅔ of area = 6 sq. ft (inlet).



Illustrations to Student's Column.

(*f*) HALL (WITH FLAT PLASTER CEILING). (*Figs. 252 and 253.*)

This was a case in which the hall had been built for some time without being heated in any way; in consequence, air had to be admitted cold, and the consequence was that this descended on to the heads of the defenceless occupants to such an extent that at last they determined to adopt a proper scheme.

Ventilating radiators were placed in recesses under the windows and behind the oak panelling. Fresh air was admitted to these radiators by inlet gratings and, after being warmed, was admitted into the hall at a height of 6 ft. By this means the down draught from the big windows was prevented. The panelling in front of the radiators was lined with sheet-iron and asbestic so as to prevent the woodwork being affected by the heat. The extraction of vitiated air was provided for by means of the three sun-burners which had ventilating tubes taken to the outer air and up which a strong current was thus always passing. Fig 252 shows the plan and fig. 253 a detail of the radiators enclosed in the panelling.

(*g*) HOSPITALS.

The subject of hospital ventilation is such a large one, and the various types of hospital so many, that we can hardly do more than touch upon it here. At least 3,000 cubic feet per head per hour is quite the minimum amount of air which should be allowed, and the inlets and outlets may be provided in any of the ways already referred to. During the last few years mechanical means have been employed for the purpose of securing ventilation. One of the largest and most complete installations on the "plenum" principle is that carried out at the Birmingham General Hospital (Mr. Henman, F.R.I.B.A., architect), in which no fireplaces are used, the air being forced in by fans, cleansed, and brought to a proper hygrostatic condition by filtering through moistened screens, warmed when required by means of steam coils, and propelled through the wards into extract flues, whence it passes into the open through flapped and louvred openings, constructed so that the varying movements of the outer atmosphere can exert no influence upon the outflow.

The illustration (fig. 254), from a drawing kindly supplied by Mr. Wm. Henman, shows the application of the system, which the following remarks will make clear. The air is sucked in from windows in the basement (carefully selected so as to be out of the way of contaminated air) by a fan, passing first through a screen of strained cocoanut fibre, kept automatically wetted every quarter of an hour. The air is then carried through a series of horizontal steam-pipes, heated to the required temperature, then through the fan and into the basement tunnels. These tunnels (or "ducts" as they are called) start in sectional area 11 ft. by 8 ft., and only in a few cases are they so little as 3 ft. in width at the extreme ends in a few branch ducts. From these ducts are taken the vertical ducts to the rooms above. At the mouth of each of these vertical ducts is a *separate* steam radiator to give extra warmth if required for different departments, in excess of that supplied by the main collection of steam coils.

In the *large wards*, the air is admitted at the window boards behind a vertical glass screen, 18 in. high, in order to screen off direct draught and direct the air upwards; it is extracted near the floor in order to ensure circulation. However, it is only in the large wards, and there only partially for constructive reasons, that the air is admitted in front of the windows, elsewhere it is through openings at a height of about two-thirds of the respective rooms. The foul air is not "extracted" at all, it is simply forced out by the continuous forcing in of fresh air, the outlets being near the floor level.

The movement of the air being well under control, the wards can be kept perfectly fresh during the whole of the twenty-four hours; whereas in cases where natural systems are adopted, the wards may, perhaps, be kept fairly fresh during the day, but become particularly offensive at night. The ventilation of the hospital is divided into eight separate systems, worked by eight fans, but in case of the breakdown of a fan, two systems can be coupled and worked by one fan.

In smaller buildings, such as cottage hospitals, &c., the method of ventilation in military hospitals may be adopted. The room may be warmed by a Galton's ventilating grate, which forms an outlet and inlet.

Further, Sherringham's ventilators are provided as inlets; one square inch being allowed for each 60 cubic ft.

An additional outlet, consisting of 12 square inches to each man, is carried from the ceiling level to 6 ft. above the roof.

(*h*) THEATRES.

The ventilation of theatres requires, as a rule, the advice of an expert. It is essential that all draughts should be carefully avoided, and for this reason the "plenum" method seems desirable, the air being admitted into a basement chamber, passed over hot-water and steam pipes, screened and moistened by means of sprays of water, and so introduced by numerous openings as to thoroughly reach every part of the house. The use of electricity has facilitated matters by decreasing the amount of air which was formerly necessary to supply the old gas burners.

The Vienna Opera House is generally quoted as a perfect example. In this case the "plenum" and "vacuum" methods are employed, there being two fans, one for propulsion and the other for exhaust. The air is admitted through the floor and risers of seats.

The Metropolitan Opera House, New York, is ventilated on the "plenum" system only. During the day the building is highly heated so that the walls may be thoroughly warmed. Before the performance begins the temperature is lowered to the required point, and as the performance progresses and the heat from the audience is felt, the temperature is gradually lowered.

The older theatres in London are many of them most inefficiently ventilated, and it is high time that efficient ventilation is insisted upon before licences are granted. All public buildings have to be provided with a proper water supply, which is properly filtered by the companies before being delivered, and it is difficult to understand why a sufficient supply of pure fresh air, warmed to the proper temperature should not also be provided.

(*j*) PICTURE GALLERIES OR SCHOOLS OF ART.

In cases of this sort in which a large amount of glass in a skylight or lantern occurs in the top part of the room; difficulty is often experienced because of the down draught which comes from the cold surface of the glass.

Powerful gas lights with ventilating tubes may be taken through the roof to induce an upcurrent, and inlet ventilators may be introduced 6 ft. from the floor in the four corners of the room.

(*k*) A CHAPEL WITH GALLERIES.

This is given as the fixed seats required a somewhat different arrangement. The chapel itself is warmed by means of two rows of 2 in. pipe each side, and two rows of 3 in. pipes in a prepared trench, covered with cast-iron floor grating. Radiators are fixed near the entrance doors, so that the incoming air may be warmed. In order to prevent a down draught from the large amount of cold air in the upper part of hall, the gallery is heated by two rows of 2 in. pipes on each side of gallery. As to the ventilation, fresh air is admitted behind the radiators on ground floor, and into the trenches in the central part of chapel by means of air channels formed of glazed drain pipes which lead in an upward direction in the channel mentioned above. The extraction of foul air is effected by means of three gas sun-burners suspended from the roof with ventilating shafts leading into a galvanised iron vitiated air-trunk, taken into a central galvanised iron box on the top of which an extract ventilator is fixed, communicating with the outer air. Figs. 255, 256 show the ground floor and basement plans respectively and fig. 257 shows a section throughout.

(*l*) A BILLIARD-ROOM.

A billiard-room is very often difficult to ventilate because of the large amount of glass in the lantern which is necessary for lighting the table, and the enormous quantity of gas which is necessary for lighting. The first thing which should be done wherever possible is to substitute electricity for gas; this will simplify matters considerably. In order to prevent a down-draught from the cold air round the glass a "lay-light" or horizontal glass ceiling may be placed below the lantern, and the space thus formed warmed by a coil of hot-water pipes, so as to cause an up current, which can be taken through an ordinary extract ventilator. Fresh air should, of course, be made to enter by means of ventilating radiators from, if possible, the four corners of the room. If hot-water heating is not desired, a ventilating grate may be used, the lay light made air tight, several Sherringham inlets placed in the walls, and the extract obtained by a special foul-air flue in the chimney-breast, with possibly a "pilot light" or gas jet to accelerate the current.

OBITUARY.

ROSA BONHEUR.—This great painter, whose talents have raised her to the highest position among contemporary artists, and such as no other lady artist has hitherto attained, died on Thursday May 25, in the seventy-seventh year of her age, at the country retreat which she had latterly inhabited at By, near Fontainebleau. She is the last member of a remarkable family who were entirely devoted to art. Her father, Raymond Bonheur, a distinguished painter, quitted Bordeaux in 1829 to establish himself in Paris; his four children, Rosa, Auguste, Isidore, and Juliette (who became Madame Peyrol) all became artists in turn, and the son of Madame Peyrol is also an animal sculptor of recognised talent. Raymond Bonheur gave every encouragement and care to the artistic training of his eldest daughter, and at the age of eighteen she exhibited her first picture in the Salon of 1840. In 1848 she obtained the "Première Médaille" for her work entitled "Labourage Nivernais," now in the Luxembourg. Among her subsequently exhibited works were "Animaux dans un Pâturage," "Le Cheval à Vendre," "Chevaux Sortant de l'Abreuvoir," "Chevaux dans un Prairie," "Vaches au Pâturage," "La Rencontre," "Le Labourage," "Un Troupeau Cheminant," "Etude d'Etalons," "Etude de Chien Courant," &c. In 1853 she obained a great success with the well-known "Marché aux Chevaux" ("The Horse Fair"), now in the National Gallery. In 1855 she sent to the Universal Exhibition her "Fenaison au Auvergne," and subsequently exhibited "Moutons au bord de la Mer," "Un Berger Béarnais," "Bourriquaires Aragonais," "Des Cerfs," "Une razzia en Ecosse," "Chevreuils au Repos," and "Berger Ecossais." The collective exhibition of these works at the Universal Exhibition of 1867 brought her to the height of a reputation which was as high in foreign countries as in her own; so much so that in the war of 1870 her cottage at By was scrupulously respected and spared by the invading army. Her brilliant success even overcame the violent prejudices then existing against the conferring of official honours on women; in 1869 the Empress Eugénie herself decorated Rosa Bonheur with the cross of the Legion of Honour; a short time afterwards she was elected a member of the Institute of Antwerp, and in 1894 was created an "Officier" in the Legion of Honour—the only French woman who has ever received such a distinction. After this she abstained for a good many years from exhibiting at the Salon, but sent one work to the Salon of the present year; and when it was proposed to present her with the "Medaille d'Honneur" of the year, she declined it, in a letter of great dignity and charm, on account of the comparative unimportance of her work. She was in fact right—the picture was not, for her, an important one, and the proposal to award the medal was probably intended rather as a recognition of her genius than of the special picture in question; but this does not detract from the fine feeling she displayed in declining the honour. At the time of her rather sudden death she was still working hard at her art, in her peaceful retreat at By, among her much-loved animals, and venerated by all who knew her for her dignity of character and her inexhaustible charity and benevolence.

MR. ABRAHAM GRAHAM.—The death has just occurred, at the age of sixty-six years, of Mr. Abraham Graham, of Bankfield House, Huddersfield. The deceased was head of the firm of contractors, Messrs. Abraham Graham & Sons, whose business is now carried on at Longroyd Bridge.

GENERAL BUILDING NEWS.

PROPOSED EXTENSION OF THE MUNICIPAL BUILDINGS, DORCHESTER.—It is proposed to enlarge the municipal buildings at Dorchester by the addition of buildings adjoining the present market-house. The additions will be used for municipal and technical instruction purposes. An inquiry has just been held by Mr. Percy Boulnois into an application of the Town Council for permission to borrow 1,900*l.* in order to carry out the scheme. Mr. G. J. Hunt is the Borough Surveyor.

ADDITION TO NORWICH LIBERAL CLUB.—A new billiard-room has been added to the Norwich Liberal Club rooms on the Walk. The new room, which is situated at the rear of the club premises, has been erected by Mr. John Downing, Mr. Edward Boardman being the architect.

CHURCH, WALTON, LIVERPOOL.—On the 25th ult. the memorial stone was laid of the new church of St. Luke the Evangelist, Walton-on-the-Hill. When completed the church will provide 564 sittings. The building will be of red brick. The architect is Mr. J. Francis Doyle, and the contract is being carried out by the firm of Mr. Samuel Webster.

ST. COLUMBA'S CHURCH, BRADFORD.—The foundation stone of the new church of St. Columba, Bradford, has just been laid. Messrs. T. H. & F. Healey, architects, of Bradford, have prepared the plans for the new church. It will consist of nave and chancel, of one height throughout, and of north and south aisles, with north and south quasi-transepts. There will be a chancel aisle or chapel on the north side, and organ chamber and vestries on the south side. Advantage will be taken of the fall of the ground to place choir vestries and parish rooms at the east end of the church, which will be above the ground, the east gable rising to a height of about 60 ft. above the street level. Entrance to the church will be gained by a porch to the west end, and there will also be an entrance at the north transept. A bell turret, which will serve at its basement as an entrance to the parish-rooms, will be the only feature of the church taking the place of the usual tower. The windows generally will be of Early English lancet type, but in the chapel and transepts a rather earlier form of traceried window will be used. The nave will comprise six bays and the chancel three. The columns and arches of the nave arcade will be fairly elevated, and the clear-story above will have coupled lancet windows. The north arcade of the chancel will be subdivided into trefoil-headed arches, and the blank portion above will be left for statuary. The building will be erected both internally and externally of stone from Ringby Quarries, near Halifax. The sittings will provide accommodation for about 700 worshippers. Mr. William Farnish is executing the mason's work, but the distribution of the other contracts has not yet been decided upon.—*Bradford Observer.*

PRIMITIVE METHODIST CHAPEL, LODDON, NORFOLK.—The memorial stone has just been laid at Loddon of a Primitive Methodist chapel. The building is designed to seat about 200 persons, and will cost close upon 1,000*l.* It is being erected by Messrs. Chaston & Grimson, of Loddon, from plans by Messrs. Kerridge & Sons, of Wisbech.

PRESBYTERIAN CHURCH, ASHINGTON. — The memorial stone of the new Presbyterian church at Ashington has just been laid. The new church, which has been designed by Mr. C. S. Errington, of Newcastle, in the Early English style, will consist of nave and transepts, and is being built of local bricks and Commondale terra-cotta dressings. The seating accommodation will be for 300, and in the hall adjoining there are seats for 150 and vestry accommodation. The building is to be lighted by gas, and heated by apparatus supplied by Messrs. Emley & Sons, of Newcastle.

RESTORATION OF ANWICK CHURCH, LINCOLN.—The Chancellor has decreed a faculty for the restoration in three stages of St. Edith's Church, Anwick, Sleaford. The first instalment of the work will be the extension of the chancel to its original length and the raising of the roof to its original height. The contract of Mr. Frank Pattinson, of Ruskington, has been accepted for this portion of the work, which will be proceeded with at once. Plans for the restoration have been prepared by Messrs. Brewill & Baily, Nottingham and Newark.

NEW CHURCH, HETTON, DURHAM. — Two foundation stones were laid on the 24th ult. in connexion with the building of a new church at Hetton-le-Hole. Mr. Piper, of Newcastle, is the architect, and Mr. William Sparrow, of Hetton, the contractor, for the building.

WESLEYAN CHAPEL, ROTHWELL, NORTHAMPTONSHIRE.—The foundation stones have just been laid of the new Wesleyan Chapel at Rothwell. Messrs. Gotch & Saunders, of Kettering, were the architects, and the contract was placed in the hands of Mr. F. Barlow, J.P. The new chapel will have a frontage of Weldon stone.

WESLEYAN METHODIST CHURCH, SILEBY, LEICESTERSHIRE.—The memorial stones were laid recently of a new Wesleyan Sunday-school at Sileby. The building, which is being erected by Mr. Sleath, of Rothley, from plans by Mr. A. E. Sawday, of Leicester, is designed to seat 400 persons, the material used for the exterior work being chiefly local bricks.

NEW CHAPEL, EAST HARPTREE, SOMERSETSHIRE.—A new chapel at East Harptree was opened on Whit-Monday. The building comprises a chapel, with seating accommodation for 200, a vestry, four class-rooms, and a caretaker's house, with the necessary outbuildings. The whole has been built of local stone, with freestone dressings, from the designs of Mr. Bird, of Radstock, the builder having been Mr. J. Flower, of West Harptree.

RESTORATION OF PARISH CHURCH, RACKENFORD, NORTH DEVON.—At Rackenford the restored parish church has just been re-opened. Mr. A. Blomfield Jackson was the architect; a new roof has been given to the church, the old carved oak ceiling cleansed of whitewash, the sanctuary enlarged, a chancel formed, the whole church repaved and wood-blocked, the seating modernised, and some oak choir seats, pulpit, and reading-desk placed in the chancel.

ROMAN CATHOLIC CHURCH, BOCKING, ESSEX.—The new Roman Catholic Church at Bocking has just been opened. The church forms part of a Franciscan conventual establishment, the nave being reserved for the use of the sisters, and the transept for the general public. The latter portion is 25 ft. by 20 ft., and the nave is 40 ft. long and 20 ft. wide, and the stalls for the sisters are of oak. The altar and reredos are not yet completed, but they will be of Hopton Wood stone and Lancashire marble, with the front of glass mosaic. The flooring of the church is of wood blocks, the ceiling is of a different colour in the various parts, that of the transept being terra-cotta, over the chancel the ceiling is blue, while in the nave it is green. Attached to the chapel are the usual convent premises. The architect is Mr. J. F. Bentley, Adelphi, and the builders are Messrs. A. Brown & Son, Braintree.

CHURCH AND SCHOOLS, CRESWELL, NOTTINGHAM.—On the 23rd ult., the memorial stone of a new church at Creswell was laid, and new schools in connexion with the church were opened. The church is being built by Messrs. Bowman & Sons, of Stamford, from the designs of Mr. Louis Ambler, of London, and will consist of nave, chancel, organ-chamber, and two small aisles, the material used being brick and stone. It will provide accommodation for 350 persons. The schools have been built by Mr. Simkins, of Bolsover, from the designs of Messrs. Brewill & Bailey, of Nottingham, and accommodate 450 children.

ST. OSWALD'S CHURCH, PREESALL, LANCASHIRE.—The newly-erected Church of St. Oswald, at Preesall, was consecrated recently. The church, which is in the Gothic style, will seat 230 worshippers; its cost is 2,800*l.* Messrs. Cox & Greg, of Fleetwood, were the contractors for the stonework, Mr. J. Kirkbride for the joinery, Woods & Jackson for the painting, and the whole edifice has been erected from the designs of Messrs. Austin & Paley, architects, of Lancaster.

CHURCH, DENABY MAIN.—The foundation-stone has just been laid of a new church at Denaby Main. The church is to be built of local stone, with a pitch pine roof, covered with red tiles. The nave will measure 81 ft. by 40 ft., and there will also be vestries, chancel, baptistry, sacristy, and organ chamber. The new church is to accommodate about 500 persons, and the estimated cost is 3,500*l.* When this is completed it is intended to erect a new vicarage, which will cost a further sum of 1,500*l.* The joint architects are Messrs. Fowler (Durham) & Smethurst (Denaby), and the contract for the building has been let to Messrs. B. Wortley & Sons, Doncaster.

CHURCH OF THE SACRED HEART, OMAGH, IRELAND.—On the 28th ult. the new Church of the Sacred Heart, Omagh, was dedicated. This church, of which the foundation-stone was laid in June, 1893, stands on a site on the summit of the Hill of Omagh. It was designed by the late Mr. William Hague, architect. The church, which is Gothic in style, oblong in form owing to the exigencies of the site, consists of sanctuary, chancel, nave, and aisles. The chancel arch which connects the nave with the sanctuary is supported on lofty pedestals rising to a height of 46 ft., and has a span of 36 ft., with height from the spring of the arch to the apex of 20 ft. The nave is connected with the side aisles by nine arches on each side, supported on ten pillars of polished granite, with capitals of Portland stone. There are two bays in the sanctuary with side altars. The aisles are lighted with two-light lancet windows, divided by mullions. The window over the High Altar is of five lights. It is filled with stained glass, the work of Messrs. Mayer & Co., of Munich. The towers are at the western angles of the church, and the gable which they limit contains a large rose window. The smaller tower is of similar design to that at the south-western angle. Both towers terminate in open traceried parapet, with pinnacles at the corners, from which spring the spires. At the angles of the tower rest flying buttresses. The length of the church is 170 ft., and the width 66 ft. The flooring of the sanctuary is in mosaic of decorative design, and the passages are tiled, and the entire church seated in keeping with the other fittings. A communion rail and gates enclose the sanctuary. Brass gas standards are fitted throughout the church. The cost has been about 20,000*l.* Mr. Joseph Colhoun, of Londonderry, was the contractor.—*Freeman's Journal.*

SS. MARY AND JOHN SCHOOLS, OXFORD.—The Bishop of the Diocese opened recently the addition which has just been completed to the Cowley SS. Mary and John Schools, and which will give increased accommodation for both boys and girls. A site having a frontage of 112 ft. and a depth of 240 ft. was secured, extending from Essex-street to Hertford-street. The buildings will be sufficient for 170 boys and 170 girls, bringing the total number up to 680. The new building is in keeping with the other part, and is of red brick, with casement windows, and the rooms are on the ground and first floors; four of them are 25 ft. square, making the number of these six, and sixty children can be taught in each; two other rooms capable of holding seventy and ninety children respectively have been added to the two others of the same capacity, and there are also two new teachers' rooms, two cloak-rooms, and the necessary offices. The buildings have been erected by Mr. S. Hutchins, from the plans of Messrs. Bucknall & Comper, Westminster, at a total cost of 5,400*l.*

BAPTIST SUNDAY SCHOOL, ACTON.—A new Sunday school and lecture-hall has been erected at the rear of the Baptist Church in Church-road, Acton. The architect was Mr. E. Monson, of Acton.

CHURCH SCHOOLS, DARFIELD. — Foundation-stones of a new church school at Darfield were laid on the 18th ult. The new school will consist of three class-rooms, the largest to be 105 ft. by 22 ft. Mr. A. B. Linford, of Wombwell, is the architect.

CARNEGIE HOUSE, MONTROSE ASYLUM.—The Carnegie House for private patients in connexion with the Montrose Royal Lunatic Asylum has just been opened. The entire length of the building from end to end is 225 ft., and the distance from back to front is 125 ft. It is constructed of Brechin stone, and consists of a centre block and wings, which may be represented by the letter E. The central portion comprises on the ground floor a hall or common central apartment, 52 ft. by 22 ft., while on the first floor there is the dining-hall. On the ground floor a corridor, 8 ft. in width, extends from the central hall to the west (or ladies') entrance, and a similar corridor extends to the gentlemen's entrance at the east end of the house. At the west end of the building, on the ladies' side, there are two drawing-rooms. At the opposite end of the House two parlours of similar dimensions to the drawing-rooms, and also a billiard-room, have been provided for the use of the gentlemen patients. Between the drawing-rooms and the entrance hall on the one side and the parlours on the other there are several private parlours. The ground floors of the wings are occupied by single bedrooms, and all the necessary lavatory and bathroom accommodation as well as cloak-rooms. At the two ends of the north wings there are isolated suites of two small rooms, with porch entrances to each. For the use of the matron rooms have been provided at the west side near the ladies' entrance, The heating chamber, vegetable sculleries, coal cellars, and other necessary equipments are located on the ground floor behind the central block. The dining-hall is situated immediately over the central entrance. The timber roof is divided into twelve panels, decorated with paintings, the subject being the signs of the zodiac. Immediately behind the dining-hall on the first floor there is the kitchen department, servants' and attendants' halls, &c. On either side of the dining-hall and in both wings there are fifteen single bedrooms of various sizes and two dormitories, access to these appartments being obtained by separate staircases and corridors, 8 ft. wide, over the ground floor corridors. On the second floor, over the central block, single bedrooms and dormitories have been provided for the attendants and servants, the third story being also occupied by servants' bedrooms. The electrical fittings have been supplied by Messrs. Singer, Frome, Somerset. The architect of the house was Mr. William Kelly, Aberdeen, and the work was carried out by the following contractors:—Mason, Mr. Alexander Crockett, Brechin; carpenter, Mr. John Raitt, Montrose; slaters, Messrs John Lindsay & Son, Montrose; plumber, Mr. James L. Warden, Montrose; glaziers and decorators, Messrs. James Garvie & Sons, Aberdeen; outside painting and inside varnishing, Messrs. Clark & Son, Montrose; plasterers, Messrs. Scott & Sellar, Aberdeen. The decorative work and chimney pieces were made by Messrs. Garvie, Aberdeen. The engineering works in connexion with Carnegie House, as well as the other engineering works in course of execution at the asylum, have been designed and supervised by Mr. T. Young, consulting engineer, Glasgow.

ADDITION TO COTTAGE HOSPITAL, BECKENHAM.—Princess Henry of Battenberg opened the extension to the Cottage Hospital at Beckenham on the 18th ult. The new wing has been made to harmonise with the older portion of the building, to which it is connected by a corridor. On the ground floor is a men's ward, 35 ft. by 22 ft., capable of accommodating eight beds, with bath-rooms and lavatories adjoining. On ascending the staircase a ward for women is reached, the dimensions and arrangements being similar to those of the one below. Messrs. Syme & Duncan, builders, of Beckenham, have carried out the contract, the architect being Mr. William G. Bartleet.

MECHANICS' INSTITUTE, HALTWHISTLE, NORTHUMBERLAND.—The foundation-stone has just been laid of the Haltwhistle Mechanics' Institute. The plans, prepared by Messrs. Oliver & Dodgshun, architects, Carlisle, were accepted after a competition among a limited number of architects. The Institute comprises a three-story building, faced with white stone. This building contains the committee-rooms, reading, billiard, and smoke rooms, with an entrance hall and grand staircase. Advantage has been taken of the level of the ground to place the recreation rooms in the basement, where provision will be made for gymnastics, &c., while the billiard and smoke rooms are located in the upper story. Behind this will be provided the large hall of one story, 70 ft. by 37 ft., affording sitting accommodation for over 400 persons.

BUSINESS PREMISES, PERTH. — A four-story building comprising shops, offices, and dwelling-houses has just been completed at the corner of

South-street and Scott-street. The building was designed by Mr. David Smart, of Perth, under whose superintendence it was erected by the following contractors:—Masons, Messrs. Robert Brand & Son; joiners, Messrs. Leith & Lumsden; slater, Mr. James Buchan; plumber, Mr. James MacLeish; and plasterers, Messrs. John MacKay & Son, all of Perth.

WORKHOUSE FOR GREENWICH.—Workhouse buildings are being erected for the Greenwich Union Guardians at Grove Park. Mr. Thomas Dinwiddy, of Greenwich, is the architect, and Mr. Rowbotham, of Birmingham, is the contractor, his tender amounting to 175,020*l*. The site, of irregular form, has an area of 9½ acres, with a frontage of about 600 ft. to Marvel's-lane. At the entrance are placed the lodge and visiting departments, with receiving wards, clothes and furniture stores, &c., to the left and right. The administrative block is centrally placed, and is connected with the nine pavilions and the chapel by open arched corridors. It contains offices and committee room and residences for master and officials in the front portion, and a central store with gallery, clothes stores, linen-room, mess-rooms, central dining halls for aged and able-bodied inmates, divided for the two sexes, kitchen, scullery, larders, bread-room, &c. There is dormitory and day-room accommodation for 262 aged males in three pavilions, for 178 aged females in two, for 200 able-bodied males in two, and 100 able-bodied females in a further pavilion. There is also on the female side a block with accommodation for twelve married couples. Two small isolation wards are provided in a remote corner. Provision for fire escape to the upper floor of each pavilion is obtained by external cast-iron balconies and staircases. Sites are reserved for future provision to the extent of three further pavilions, in connexion with which the dining halls in the administrative block have been planned to allow of extension at any future time without disturbance of the first buildings. There is also open space reserved for additional staff. The chapel, to seat 400, is situated in the rear of the administrative block, centrally placed between the different classes and sexes. In a block next the able-bodied pavilions are provided the laundry departments, with engine and boiler houses, bakery, &c. Flour stores are placed in the water tower, which is surmounted by a 20,000 gallon tank. Establishment and labour shops, with hand corn mills and a stoneyard, are planned near the able-bodied quarter, and smaller shops are provided for the aged inmates. A mortuary and small stable accommodation complete the scheme. The buildings are being faced with red pressed bricks from the Tunbridge Wells district, with a spare use of Portland stone, and are to be covered with Welsh rag slating. Internally glazed facings are to be used to the dining halls, kitchen, larders, stores, &c., and throughout the laundry block.

NEW COTTAGE HOSPITAL, CARSHALTON.—On the 24th ult. a new Cottage Hospital was opened by Lord Rosebery. The hospital owed its origin to a legacy of 300*l*. by the late Mr. Thomas Morgan, of that village, if his trustees were satisfied that a scheme for the erection of it could be carried out within twelve months from the time of his death. A committee was formed and funds promised, and a freehold site was given by Mr. J. D. Hayton, architect, of Carshalton. The hospital has been erected by Mr. S. J. Evans, builder, of Carshalton, from a design by Mr. W. W. Gale, Surveyor to the Urban District Council, at a cost of 1,100*l*.; and the furniture and fittings have cost another 300*l*. On the ground floor at each end of the building are two wards, one for male patients, and the other for females, each containing a couple of beds; and in addition there is in the female ward a cot to be used for children, if required. There is also an emergency ward with accommodation for one bed. This room is also available for operations. A lavatory is fitted up in each of the wards, which are paved with wood block floors. On the ground floor also is provided the matron's room, and kitchen, scullery, and the usual offices. On the first floor are four bedrooms, one for the matron, one for the nurse, and servants, and a spare bedroom. There is also a bathroom, with hot and cold water services, and a large linen cupboard. Electric bells have been fitted to each room.

A NEW THEATRE FOR HOLLOWAY.—A new theatre is to be erected at Holloway, to be called the Marlborough. It will be close to the Nag's Head, and within a few minutes' walk of Finsbury Park station. The plans have been prepared by Mr. Frank Matcham.

NORFOLK COUNTY ASYLUM.—Extensive alterations and additions are about to be made at the Norfolk County Asylum, Thorpe, near Norwich. The proposed works comprise wards for 140 additional patients, new blocks for attendants and nurses, alterations to administrative offices, new workshops, electric installation, &c. Mr. A. J. Wood, London, has been appointed architect for the work.

VICTORIA PIER AND PAVILION, COLWYN BAY.—The first pile for the new pier was driven on the 29th ult. The work is being carried out from the designs of Messrs. Mangnall and Littlewoods, Manchester; the Widnes Foundry Company being the contractors for the first section, including the pavilion, which has to be completed by the end of this year. The Royal Assent was given to the Board of Trade order on August 2, 1898, and an agreement has been entered into for granting a lease of the foreshore by the Colwyn Bay District Council. The pier promenade leading to the pavilion will be 40 ft. wide, this being as wide as any modern pier recently erected, and constructed with iron piles placed at intervals, securely braced together, supporting steel rivetted girders of spans that are considered strong without any extravagant use of metal, based on experience gained in the construction of two piers and pavilions recently erected at Morecambe. The pavilion is situate 50 yards away from the entrance to the pier on the right hand side; it will have a dome and campanile towers treated in the Renaissance style, and it is calculated to hold about 1,500 persons. On three sides of the pavilion will be a gallery; with tiers of seats in front and a promenade behind, two external balconies for promenade purposes are accessible by doors from the gallery. Cloak-rooms, lavatories, and shops are provided. On passing through the turnstile there is a crush hall leading to the body of the hall; a staircase leads to the gallery above from the hall. Refreshment bars are provided. The seating of the body of the hall is sub-divided into reserved and ordinary seats. The stage has been specially designed for high-class dramatic, variety, and orchestral performances on an extensive scale, and will be fully equipped with all the modern appliances for these several performances. All possible precautions have been taken that the audience may be able to disperse rapidly in case of a panic, sufficient exits being provided to empty the building in two or three minutes. It is intended next year to complete the second section, which will comprise the continuation of the pier to 350 yards in length and 30 ft. in width, the extremity being widened out for open-air music and other entertainments. Shops and shelters will be provided at each side, with a handsome band kiosk in the centre, provision being made round three sides of the pier head for embarking and landing boats. Shelter kiosks will be placed at intervals along the pier.

POLICE-COURT AND BUILDINGS FOR DARLASTON. The Staffordshire County Council recently acquired a site near to the Darlaston Town Hall on which it has been decided to erect police-court and police buildings, &c. Plans have been prepared by Mr. Joynson, and building operations will soon be commenced.

SANITARY AND ENGINEERING NEWS.

NEW BRIDGE, GLASGOW.—The opening of Glasgow's new bridge took place on Wednesday last week. The new bridge crosses the Clyde at the foot of Jamaica-street. The former bridge on the same site was erected in 1835, from designs by Telford. The reason for reconstruction was the weakening of the foundations caused by the dredging operations of the Clyde Trust. The engineers of the new bridge were Messrs. Blyth & Westland, Edinburgh; the contractors, Messrs. Morrison & Mason, Glasgow.

NEW DOCKS FOR THE PORT OF LONDON.—We hear that the firm of Sir John Jackson, Limited, have contracted to execute the works, as planned and designed by Sir Benjamin Baker and Mr. P. W. Meik, for the construction of new deep-water docks at Dagenham, Essex, at an estimated cost of about two millions sterling. It is expected that the docks, where various labour-saving appliances are to be used for loading and unloading cargoes, will be completed three years hence.

PROPOSED REFUSE DESTRUCTOR FOR LIVERSEDGE, YORKS.—An inquiry was held at Liversedge on the 26th ult. by Colonel Coke, on behalf of the Local Government Board, upon an application of the District Council for powers to borrow money wherewith to provide a refuse destructor. Mr. F. Leslie Watson, A.M.Inst.C.E., submitted plans of the destructor works on behalf of the Horsfall Furnace Syndicate.

PROPOSED BRIDGE, COXGREEN.—At a meeting of the Chester-le-Street Rural District Council the Joint Committee's of the Chester-le-Street and Houghton-le-Spring Rural District Councils' recommendations that these two Councils subscribe to the cost of the above bridge were unanimously approved, provided satisfactory public financial support is given to the scheme, and that the County Council of Durham be again interviewed as to their contributing to this much-needed public improvement. Great interest is being taken in the neighbourhood of Washington, Usworth, Coxgreen, and Penshaw, regarding the necessity for the erection of this footbridge, which crosses the River Wear from Coxgreen to Washington Staiths. The only means of access at present is by means of ferry-boats, which are stopped in times of flood and after ten o'clock at night. The proposed structure will be a steel arched bridge of 150 ft. span, having stone abutments founded on rock, the underside of the bridge being 30 ft. above high-water mark. The plans have been prepared by Messrs. D. Balfour & Son, of Newcastle and London.

DRAINAGE SCHEME, DORCHESTER.—On the 25th ult. Mr. H. Percy Boulnois held an inquiry at the Town Hall, Dorchester, on behalf of the Local Government Board, into an application of the Town Council for permission to borrow 16,000*l*. for purposes of sewerage and sewage disposal. Mr. G. J. Hunt, Borough Engineer, described in detail the nature of the proposed works.

STAINED GLASS AND DECORATION.

WINDOW, BUSBRIDGE CHURCH, NEAR GODALMING.—A memorial window which has been placed at the west end of this church was unveiled on the 20th ult. The window is from a design by the late Sir E. Burne-Jones.

MEMORIAL WINDOW IN THE GUILDHALL, YORK.—A stained glass window in memory of Sir Joseph Terry was unveiled in the Guildhall, York, on the 27th ult. The window was designed and executed by Messrs. Shrigley & Hunt, of London and Lancaster.

DECORATION AND REPAIR OF ST. JAMES' CHURCH, HAMPSTEAD-ROAD.—This church has just been reopened after thorough internal decoration and repair. The Sanctuary floor has been raised and laid with wooden blocks; the walls have been panelled with carved oak, a baldachino erected over the altar, with paintings of two censing angels above. Outside the church a wrought-iron structure of artistic design has been erected. The whole work was carried out by Messrs. Percy Bacon & Bros., of London.

WINDOW, STRADBROKE CHURCH, SUFFOLK.—A stained glass window has been placed in the south side of Stradbroke Church, in memory of Mr. T. B. C. West. The window was supplied by Messrs. Clayton & Bell, of London.

FOREIGN.

FRANCE.—The new Opéra Comique house is already to be considerably altered to remedy the small size of the stage and the insufficient storage for scenery.——A monument to M. Faure is to be erected at Père Lachaise, from the design of M. Saint-Marceaux, consisting of a portrait statue with some symbolical accessories. Another sculptor, M. Peynol, has been commissioned to design a monument to Français, the late landscape painter.——The municipality of Paris has set apart a considerable sum for various new school buildings in Paris, and for the erection also of a new municipal library.——The Municipality of Lille are about to devote a sum of 35,000,000 francs to the execution of certain works of architecture and road construction.——M. Loviot, who exhibited the drawings for a "Grande Salle des Fêtes" to be formed in Galerie des Machines, noticed in our review of "Architecture at the Paris Salon," has received the medal of honour in the architectural section. In the section of painting the medal has been awarded to M. Tattegrain, for his large picture of the evacuation of St. Quentin; and in that of sculpture to M. Dubois, for his "Pardon."——The death is announced, at the age of seventy six, of M. Vacquer, assistant curator of the Carnavalet Museum, and the author of some important works on archæological subjects, and who was concerned in some of the most important excavations carried on in Paris during the last thirty years. He was associated with the late M. Berty in all the work of the latter in connexion with the topography of "Vieux Paris."

MISCELLANEOUS.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS. The offices of the Tribunal of Appeal under the London Building Act have now been removed from the temporary premises in Savoy Hill to the new building of the Surveyors' Institution, and all communications should be addressed "To the Clerk to the Tribunal of Appeal, London Building Act (1894), 13, Great George-street, Westminster, S.W."——The Coalbrookdale Co. have removed their London showrooms from the Victoria Embankment to large premises at 141, Queen Victoria-street, E.C., with a goods entrance at 231, Upper Thames-street.

INSURANCE IN THE BUILDING TRADE, YORKSHIRE.—A meeting was held at the Bradford Building Trades and Stone Exchange on the 25th ult. to consider a proposal for the establishment of an insurance society against accidents, to comprise all the building trades in Yorkshire. It was reported that Leeds had not replied to the Bradford circular on the subject, but that a sympathetic reply had been received from Halifax. It was decided to form a society to cover the risks incurred from accident by the members of the Bradford Stone Exchange, and members of the directorate intimated their willingness to guarantee a fund sufficient for the purpose of inaugurating the scheme.

THE LIGHT RAILWAYS ACT, 1896.—Several applications are before the Light Railways Commissioners in respect of light railways in various parts of the kingdom. The projects comprise lines (by the Finchley Urban District Council) along the Great North-road, through East Finchley and Whetstone, to Barnet; by the Hornsey Urban District Council, along the Archway and Great North-roads; by the Finance, Mines, and Industries Association, from Bishop's Waltham, through Swanmore, Droxford

and Soberton, to the Meon Valley railway of the L. & S. W. line; by Power and Traction, Limited, from the Great Eastern line at Oakington to Cottenham, passing through Westwick; by the Escrick and Riccall Rural District Councils, in the Derwent Valley; by certain "promoters," from Whitchurch to Vernhams Dean, Hants, through Bourne, Stoke, Hurstbourne Tarrant, and Upton, in the Bourne Valley; and by the Nuneaton and District Light Railway Company, in the Urban Districts of Nuneaton and Chilvers Coton, and Atherstone, co. Warwick.

PROPERTIES FOR SALE.—(1) The Sterborough Castle Estate, near East Grinstead and Lingfield, comprising about 400 acres, and a mansion, together with the remains of Sterborough, or Prinkham, Castle, originally built by Reginald de Cobham, 1342, who fought at Creçy and Poictiers, a grandson of Reginald de Cobham, who married the daughter and heir of William de Hever, of Hever Castle. The castle, which was garrisoned in the Civil War by the Parliament forces, and dismantled in 1648-9, appears in an old drawing as having a round tower at each angle, with a draw-bridge, and inner quadrangle, covering, together with the moat, an area of one and a half acre. The property passed through various hands, including Lord Cobham, who founded the college at Lingfield, and whose daughter married Humphrey, Duke of Gloucester; Ralph Nevill, Earl of Westmoreland; Sir Thomas Richardson, Chief Justice of the Queen's Bench (*obiit* 1634); and John Tonge, who about seventy years ago purchased it from Alderman Smith's executors, and built the new house. (2) "The Olde House," Dogpole (Duckpol), Shrewsbury, an Elizabethan oak-timbered house, which we believe is that which is depicted (as L-shaped on plan, and with a forecourt, opposite St. Mary's-turnstile) in the wood-cut in Owen and Blakeway's "History of Shrewsbury," vol. i., 1825, from a drawing by J. Buckler, and known as the house of Master Thomas Jones, the lawyer; being the house occupied by Prince Rupert after the first siege of Worcester, and by Prince Charles and the Duke of York in 1642, when Charles I. went to Shrewsbury after he had raised his standard at Nottingham on August 22. (3) Chalfont Park, Buckinghamshire, lying on the right-hand side of the high road from Uxbridge to Amersham, nearly 1,000 acres in extent, with a beautifully timbered park of 250 acres on hilly ground, and woodlands, watered by the Misbourne. There is a dower house, known as Chalfont Lodge, on the estate. The mansion house was designed by Chute for General Churchill.

JERRY-BUILDING IN LEEDS.—The Building Clauses Committee of the Leeds Corporation, at a meeting on the 26th ult. passed a resolution requiring that in future all mortar used for buildings shall consist of not less than one part of lime to two parts of good engine ashes, or clean river sand. This resolution was the outcome of a report presented by Mr. Fairley (city analyst) showing that many samples recently analysed fell far below this standard. As a result of the action of the committee, the building inspectors of the Corporation will, of course, have power to take samples of any mortar being used for building purposes, and have them submitted for analysis.

EXCAVATIONS AT CANTERBURY CATHEDRAL.—Excavations conducted by Mr. St. John Hope on behalf of the Society of Antiquaries have been in progress during the past few days in the garden adjoining the residence of the Bishop of Dover, in the Precincts of Canterbury Cathedral. Five Early English corbels were found beneath the site of the old monastery dining-hall, similar to those recently found during excavations for the Archiepiscopal Palace. The discoveries go to prove that the whole of the buildings on this side of the cloisters were entirely rebuilt in the second quarter of the thirteenth century.

LINCOLN MASTER BUILDERS' ASSOCIATION.—The inaugural dinner of the Lincoln Master Builders' Association was held at the Spread Eagle Hotel, Lincoln, on the 25th ult. The President for the year (Mr. W. H. Close) occupied the chair, and Mr. E. V. Lansdown was in the vice chair. The loyal toasts having been proposed, Mr. J. M. Harrison submitted "The Mayor and Corporation." Mr. Wm. Watkins, an ex-Mayor of Lincoln, responded. The Chairman then submitted the toast of "The Lincoln Master Builders' Association" (branch of the National Association of the Master Builders of Great Britain), and having traced the history of the local Association, he said he thought there was never a better understanding between the building trades of the city than at the present time. They were able to settle the differences between the operatives and themselves a year ago, and were able by a certain amount of tact and forbearance, and a display of conciliation, to come to terms. With regard to the unfortunate dispute between the Master Builders' Association and the plasterers, there was in sight a means of settlement which would be agreeable to all parties concerned. Mr. S. Horton proposed "The Architects," and Mr. Watkins, Mr. Cooper, and Mr. Dunn acknowledged the toast. Other toasts followed.

HALL OF RECORDS, NEW YORK.—The architect's plans and specifications for the magnificent new Hall of Records for New York have been issued, says the *Liverpool Mercury*. They require $2,000,000 to be spent on the external building proper, and $2,500,000 additional to complete the interior. The estimate for sculpture is $85,000, and for mosaic work is $10,000. No wood whatever will be used, the interior being entirely of coloured marble and the window frames of copper. The Mayor, the Board of Comptrollers, and the city engineers are in favour of adopting the architect's recommendations.

ARCHÆOLOGICAL DISCOVERY IN LEEDS.—A discovery that has been made within the last few days in connexion with the laying of new cables for the conveyance of electric light from the generating station of the Leeds Corporation in Aire-street, Leeds, to the centre of the city, is likely to cause some interest among local archæologists. The work that is in progress is the laying of eleven fresh cables into Wellington-street, on the latest and most approved principles. In excavating to the proper level the workmen came across a splendidly-preserved stone arched vault in Aire-street. Its area was 20 ft. long, 12 ft. wide, and 10 ft. high to the crown of the arch. Subsequent excavations showed that it was one of a series of five beautifully preserved arches of similar dimensions, the walls between the arches being about four and a half feet thick and in splendid preservation. A still more startling discovery was made after the vaults had been bared, for it was found that, in addition to having communication with each other, there was in the one farthest from Wellington-street an entrance to a subterranean passage. This had evidently been blocked up years ago, and only theories can be formed as to the object with which it was built, and with regard to its objective point. —*Yorkshire Post*.

THE BRITISH FIRE PREVENTION COMMITTEE.—At the testing-houses of this Committee an important series of investigations is again in hand. Among the tests is one with a floor of steel joists and concrete filling, the concrete being of the aggregate lately allowed by the London County Council. Another floor under investigation is a solid timber floor, and a third is a floor by the Columbian Fire-proofing Company, U.S.A., which is to be subjected to very high temperatures. Various forms of doors of wood, armoured wood, and iron will be under investigation, also silicate partitions and ceilings by Messrs. Anderson and Messrs. Broadbent, some patented partitions and plasters, some plain electro-glazed windows by the Luxfer Prism Syndicate, and lastly, some of the non-flammable materials. A set of ordinary partitions have also been recently tested. Owing to the numerous applications to visit the station, the Executive have asked us to remind would-be visitors that the attendance is still strictly limited to the members, by rotation, and a few special guests.

BUSINESS PREMISES, JEWIN-STREET, CITY.—A block of business premises at the corner of Jewin-street and Well-street has just been completed. The site was included in the Cripplegate fire area. The building, which is lighted by electricity and consists of six floors, was erected by Messrs. Killby & Gayford, the architects having been Messrs. Ford, Son, & Burrows.

CAPITAL AND LABOUR.

THE NORWICH BUILDING TRADE.—One section of the building trade of Norwich has been satisfied. The labourers have accepted the terms offered by the employers, and have also adopted a resolution in which the courtesy with which the negotiations has been conducted is acknowledged.

WOLVERHAMPTON PLUMBERS' DISPUTE.—There has been an amicable settlement arrived at between the plumbers and the master builders, of whom the latter were called upon to accept the demands of the men for an ½d. advance per hour, viz., 8½d. to 9d. Early in the month the employees served the masters with a notice which should have expired on the 19th ult., but were extended, to meet the masters' wishes, a fortnight. On Tuesday night a conference took place at the Victoria Hotel, Wolverhampton, between representatives of the Master Builders' Association, the master plumbers, and the operative plumbers, with the result that a settlement was arrived at, and a formal agreement signed. The question of an advance was deferred for the present year, if not *sine die*. The men demanded the adoption of a code of working rules, and their proposals were practically accepted *en bloc*, the rules being the same as have been in force between the master plumbers and men.

THE STRIKE OF WAKEFIELD JOINERS.—The Wakefield joiners and carpenters who are at present on strike, owing to the masters refusing to accede to their demands to sign a code of working rules, have decided to approach the employers with a view of coming to an amicable settlement, and to each they have sent a circular asking the following question:—"Providing the clause relating to piecework is expunged from the rules, are you prepared to sign them; if not, are you in favour of the dispute being submitted to the Wakefield Board of Conciliation, and to abide by their decision?"

YORKSHIRE BUILDING TRADE.—So far as the Yorkshire lock-out of all building trades is concerned, matters remain much as they have been, the latest phase being the resolution of the Scarborough employers to lock out their men, the season trade having now practically finished. There is nothing really fresh to record in regard to the strike of the London Order of Bricklayers in Leeds. The local branch of this organisation has resolved upon a half-crown levy for the support of the men locked out or on strike. The men received their first strike pay, amounting to 15s. each, on Saturday last.

LEGAL.

THE WORKMEN'S COMPENSATION ACT.

IN the City of London Court on the 26th ult. Mr. Pitt Lewis, Q.C. (Deputy Judge), disposed of the first case which had come before the Court under the Workmen's Compensation Act, 1898. Fred Martin, Plaistow, labourer, sued the London and India Docks Joint Committee to recover compensation for personal injuries which he had suffered while in their service. Mr. Giveen was counsel for the plaintiff, and Mr. George Wallace for the defendants. The defendants not only denied their liability to compensate the plaintiff for the accident which had happened to him while he was working for them, but disputed the basis on which he was to be paid, even if he was entitled to recover. The applicant was working as a labourer in a warehouse belonging to the defendants situated close to Houndsditch. While working close to a skylight near the roof, the plant on which he was standing gave way, and he was thrown to the ground. His jaw was fractured, and he sustained other injuries. Oddly enough he had only been in the service of the Dock Committee for a day and a half, and after the accident they forwarded him 7s. 3d. as his wages. The first section of the statute, said the counsel for the plaintiff, entitled the man to recover damages for injuries received by accident "arising out of and in the course of the employment." Section 7 stipulated that liability only existed when injuries had been sustained "in or about a railway, factory, mine, quarry, or engineering work," or "in or about any building which exceeded 30 ft. in height, and is either being constructed or repaired by means of a scaffolding, or being demolished, or on which machinery, driven by steam, water, or other mechanical power, is being used for the purpose of construction, repairing, or demolition thereof." One of the sub-sections stated that "factory" had the same meaning as in the Factory and Workshop Acts, 1878 to 1891, and also included "any dock, wharf, quay, warehouse, machinery, or plant to which any provision of the Factory Acts is applied by the Factory and Workshop Act, 1895, and every laundry worked by steam, water, or other mechanical power." As to the basis on which the plaintiff's damages were to be assessed, it was contended on his behalf that, as he earned 7s. 3d. in a day and a half, it must be presumed that if he had gone on working he would have earned 26s. to 30s. per week. That was the claim which he was now putting forth. He was at work in raising materials by means of a pulley, and, therefore, was engaged in the exercise of "mechanical power." The defendants' case was that no liability could attach to them at all. The Act of Parliament made them liable for accidents happening in any "dock, wharf, quay, or warehouse." That meant that the warehouse must be one which adjoined or was contiguous to some wharf, dock, or quay. It could not be argued that employers were responsible under the Workmen's Act for any accident that happened in any class of warehouse. The warehouse where the plaintiff met with his injuries was situate a mile away from the defendant's docks. That being so, it could not be suggested that the warehouse was in any sense a part of the docks, quay, or wharf. It did not follow that the plaintiff would have earned 26s. or 30s. per week. He was a casual hand, and was only entitled to have his damages measured according to what his average weekly wages would have been. In delivering a considered judgment, the Deputy Judge said the case was like solving a conundrum, arising, as it did, out of that extraordinary tangle of legislation called the Workmen's Compensation Act. The statute seemed to have been drawn by a person who had strayed into the land of topsy-turveydom. The man who drew the Workmen's Compensation Act did not know what he meant, and did not repeat it. The draughtsman had left the Judges to guess what was meant. He (the Deputy Judge) was willing to do that, but he was afraid that it was only a guess he could make in solving the problem. His decision must be unfavourable to the plaintiff, for he was bound to hold that he could not recover. He could not hold that the warehouse in which the accident happened was one that came within the purview of the Act under which the proceedings had been brought. No doubt the case was an important one to employers and workmen alike, and probably both sides had organisations which would take up the matter. He would be sorry if it rested where it was, because the points in question were important. Even the Court of Appeal shrank from deciding almost anything under the Workmen's Compensation Act; and really there was no wonder at it. It was, indeed,

a wonderful piece of legislation, and he was very sorry to have to construe the various sections which had been submitted. Execution would be stayed with a view to an appeal.—*City Press.*

MEETINGS.

SATURDAY, JUNE 3.

Association of Municipal and County Engineers.—Yorkshire District Meeting, Sheffield.

Edinburgh Architectural Association.—Annual excursion. Visit to Arbroath Abbey, &c.

Northern Architectural Association.—Visit to Chester-le-Street and Lumley.

MONDAY, JUNE 5.

Society of Engineers.—Mr. R. G. Allanson-Winn on "Foreshore Protection, with special reference to the Case System of Groyning." 7.30 p.m.

TUESDAY, JUNE 6.

Glasgow Architectural Association.—Annual Business Meeting.

WEDNESDAY, JUNE 7.

Institution of Civil Engineers.—Engineering Conference, to be opened with an address by Mr. W. H. Preece, President. 10.15 a.m.

Royal Archæological Institute.—(1) The Worshipful Chancellor Ferguson, F.S.A., on "Consistory Courts and Consistory Places;" (2) Mr. Albert Hartshorne, F.S.A., on "Samuel Daniel and Anne Clifford, Countess of Pembroke, Dorset, and Montgomery." 4 p.m.

British Archæological Association.—(1) Mrs. Collier on "Some Mediæval Châteaux and Dwellings in France"; (2) Mr. Arthur Oliver on "Symbolism." 8 p.m.

Builders' Foremen and Clerks of Works' Institution.—Ordinary meeting of the members. 8 p.m.

Institute of Sanitary Engineers (Incorporated).—Meeting of the Election Committee at 2.30 p.m.; and the General Purposes Committee at 3.30 p.m.

THURSDAY, JUNE 8.

Institution of Civil Engineers.—Engineering Conference (continued).

Society of Antiquaries.—8.30 p.m.

Royal Architectural Museum and Westminster School of Art (Tufton-street, S.W.).—Annual general meeting. Sir Wyke Bayliss on "The Bogey in the Studio—an Address to Art Students on the Questions of the Day." 4 p.m.

FRIDAY, JUNE 9.

Institution of Civil Engineers.—Engineering Conference (concluded).

Institution of Junior Engineers.—Visit to the Bankside Works of the City of London Electric Lighting Company. 6.30 p.m.

RECENT PATENTS:

ACCEPTED SPECIFICATIONS.

Open to Opposition until July 25.

[1898] 4,328, McLarty, Apparatus for Cutting Stone or similar material. 10,874, Smith, Tube Joints. 11,076, Baivy, Telephone Installations. 11,170, Taylor and Others, Manufacture of Artificial Stone Slabs by Hydraulic Pressure. 11,201-2, Thompson and Others, and 16,120, Harrison, Prepayment Attachments for Gas and other Meters. 11,595, Wade and Electric Motive Power Company; 15,443, Veritys & Steele, and 15,785, Scott, Davis, & Wright, Electrical Switches. 11,696, Holt, Speed, Distance, and Gradient Indicators. 11,862, Beldams, Street or Road Gulleys. 12,044, Brown & Crossley, Door-attachments. 12,089, Bridge & Trainer, Models for the Teaching of Drawing. 13,376, Smethurst & Greig, Securing Fencing-wires to Standards. 13,460, von Pittler, Lathes. 14,698, Raybould, Composite Circular Saws. 14,841, Campbell, Circular-saw Guards. 15,060, Stanfield & Martin, Lathe Chucks, Drill-holders, &c. 15,132, Richard, View-finders. 15,411, Pertwee & Baxter, Spanners. 15,544, Hodgson, Grinding-pans for Materials to be Granulated. 15,656, Tschurl & Petraschek, Preservation of Wood. 15,664, Herbert, Casements. 15,665, Shaw, Unions for Joining and Coupling Pipes. 15,670, Tonks & Burn, Window-sash Fasteners. 15,762, Jowett, Gulleys and Sinks. 15,987, Hipkins, Scales and Balances. 16,016, Stephens, Window Ventilators. 16,096, Pickup, Waste Water Closet Pan. 16,157, Berger, Means for Moving Revolving Tool Carriers, &c., in a Direction at Right Angles to their Axes of Revolution. 16,870, Kerr, Brush-holder for use by Painters when Working with the Aid of a Pole. 18,368, Lygo, Attachment of Brushes, &c., to their Handles or Sticks. 19,862, Barth, Collapsible Ladders. 22,448, Keiths, Coal-saving Grate. 25,683, Green, Traps and Ventilators for Drains. [1899] 341, Rowland, Combined Heating, Cooking, and Ventilating Stove or Fireplace. 379, Proctor & Butterfield, Nail Extractors. 2,726, Flower & Gambrell, Electrical Measuring Instruments. 3,233, Belknap & Sundh, Conduits for Electrical Cables. 5,989, Patriarche, Lifting Dogs, &c. 6,030, Freundlich, Shaft Furnaces and Kilns. 6,978, Cope, Apparatus for Propelling, Purifying, Moistening, or Disinfecting Currents of Air, &c., for Ventilating and Other Purposes. 7,058, Griffiths & Hawker, Tipping Waggon. 7,574, De Léry & Armington, Gas Burners. 7,607, Lewis, Composition for use in Collecting or Saving Waste Gold Leaf. 7,789, Sackett Wall Board Company, Saturation of Plaster, Cement, &c., with Water. 7,877, Demuth, Generation of Acetylene. 7,917, Robinson, Connexions for Water-closets, Sinks, &c. 7,955, Tulloch & Harris, Stone-cutters' Mauls. 7,965, W. A. Baker & Co. & Summerfield, Stair Treads, Floor Coverings, &c. 8,114, Davis and Others, Application of Paint, Lacquer, and other Coatings. 8,135, Coe, Package Roll for Holding and Applying Metallic Leaf. 8,136, Lavigne, Automatic Manufacturing Company, Turret Lathes. 8,145, Seagrave, Adjustable Ladder Bases. 8,167, Biheller, Globes or Shades for Gas Lights.

ABSTRACTS OF PATENTED INVENTIONS.

2,169.—GAS COOKING AND HEATING STOVES, COMBINED: *E. W. Beech & A. G. Melhuish.*—The novelty lies in the combination of a gas-cooking stove with a gas-fire, or argand burner, or other means for warming the room, which is independent of the cooking burners; on the door of the oven is fitted a gas-fire, supplied with gas through a union in a hinge of the door, and having a flue which communicates with a chamber at the stove's top, wherein is a water-heating coil connected with the boiler that may be heated also by turning the oven-burner flames against the water-tubes; the oven door is so hung that it may be opened from either side by means of a rocking-lever pivotted at its middle and having eyes that fit over pins at the lever's ends, when one of the two side-handles is turned to raise the connecting rod the eye above is lifted from its pin and the door can be opened about the other pin as a hinge, short pins resting in shallow sockets serving as the lower hinges; the stove has taps for hot and cold water, and its boiler can be adapted to effect the circulation of water through a hot-water cistern.

2,182.—COVERINGS FOR ROOFS AND WALLS: *P. Lehmann.*—Jute linen fabric is steeped in linseed oil boiled with silver litharge (a fused crystalline lead oxide obtained as a by-product in separating silver from lead), or a board composed of leather parings is steeped in a varnish of caoutchouc melted in boiling linseed oil; the dried fabrics are coated with whitening, silver litharge, washed earth colour and linseed oil varnish mixed together, powdered on either side with sand and ground sandstone, and then oil-painted on the outer side.

2,202.—COVERINGS FOR WALLS, &C.: *G. Stephens.*—On the colour prints, produced in tones and shades, are superposed transparent or opaque colours in oil, water, or other medium, by rollers, blocks, or other means, or by hand, in such a manner that the original prints are visible, wholly or partially, through the colours laid over them.

2,217.—SELF-CLOSING AND SHOCK-PREVENTING VALVES AND COCKS: *E. Segalli.*—The pressing down of the button causes the main valve to leave its seating, whereupon water flows through the tap. The descending valve forces down a flexible diaphragm, which rests within a bottom chamber, wherein the pressure conquers the resistance of a coiled spring above the diaphragm, and so opens a valve for the passage of water from the bottom chamber to that above the diaphragm. Upon release of the button the upper valve is closed by the spring, and the inner valve falls to its seating, but does not altogether close until the water which originally passed from the bottom chamber has returned through a notch made in the seating and the space between the spindle and the valve casing.

2,272.—BRUSH HANDLES, AND THEIR ATTACHMENT: *J. W. Buckley.*—For fastening handles to brush-heads, &c., is used a screw-eye, having a curved and pivotted loop, that may be used for hanging the brush, or be turned down to lie against the stock.

2,302.—DOORS FOR BUILDINGS: *W. A. McKay.*—Sliding doors are hung upon and between sectors having, preferably, a radius equal to the height of the door; one sector is pivotted on a bar attached to the door, whilst a bar, pivotted below, prevents the door from resting halfway; for hanging the doors sectors may be employed, together with ordinary rollers.

2,309.—APPARATUS FOR GENERATING ACETYLENE GAS: *G. Jacobi.*—The inventor's object is to maintain a constant supply of water to the carbide, and so to generate acetylene gas at an even rate; through a pipe fitted with a cock liquefied carbonic acid passes from a cylinder into a water reservoir, and, in passing, forces water through another pipe, also provided with a cock, to a funnel shaped distributor placed over a carbide container; the two pipes are connected by a branch which admits carbonic acid to the stream of water for distributing it over the carbide; the gas passes from the generator through a cylinder partly filled with glass wool, and thence through condensing pipes into a holder which has a pressure gauge; the funnel distributor is hinged, so that it can be turned aside whilst the generator is being charged

2,331.—BRICKS, BUILDING-BLOCKS, AND SLABS: *T. H. R. Guttridge.*—These are composed of ashes, clinkers, and the refuse from dust-destructors, ground and mixed with cement, oxide of iron, and water containing soluble glass, together with, it may be, sand or ground beach shingle; the bricks can be glazed, and roughened-glass facing-plates may be fixed on to them by means of soluble glass and Portland cement.

2,531.—GLAZING FOR ROOFS, &C: *W. Curbstone.*—The upper portion of the web of an iron or steel astragal, or glazing-bar is shouldered or enlarged that it may support the sheathing and wings of the lead or other soft metal; beneath the bar a dovetailed or similar projection or rib is made for engagement with a recessed wooden bar, or for supporting sheet-metal drainage channels for the water of condensation; channels may be made in the lead for asbestos or other packing.

2,553.—ANTI-FOULING PAINTS: *G. Warner & C. F. W. Perry.*—These are made of an admixture of oxide of iron, red lead, copper oxychloride, gums, white arsenic, shellac, boiled linseed-oil, naphtha, turpentine, and resin.

2,567.—A SOLDER FOR ALUMINIUM: *G. Hammond.*—The solder is composed of a tin alloy, 100 parts, silver, 20 parts, zinc, 10 parts, and aluminium, $\frac{1}{10}$ to 6 parts; iodine, or an iodide of tin or mercury alone, or mercury mixed with a hydrocarbon such as vaseline, constitutes the flux.

2,578.—WATER-WASTE PREVENTERS AND CLOSET-DISINFECTING APPARATUS: *W. A. La Fave.*—The disinfecting apparatus, placed between the basin and the flushing tank, contains an annular chamber which holds a soluble disinfectant passed in, through an opening, in the form of pellets, and into which a portion of the flushing water is turned by means of a lip, the water dissolves some of the pellets and joins the main stream through perforations below, since the water percolates slowly through the disinfectant it enters the basin as an after-flush.

2,623.—DISINFECTING DISCHARGE FOR WATER CLOSETS: *F. Carman.*—In order to deliver a quantity of disinfectant after each flush the material is put inside a part of the tank, to whose other part is fitted a pipe that leads to the basin, and has a valve which is normally held open by a lever of tubular shape, and engaging with a head upon the valve stem. When the closet is flushed the ball valve opens, and its lever—provided with a slotted link and gear—lifts the lower lever so that its contents pass into the chamber, whereof the valve is thereupon closed. As the water-level in the tank rises the lever falls to open the valve and allow the contents of the chamber to flow as an after-flush.

2,733.—CRANES AND DERRICKS: *W. E. Hutchinson & A. E. Newton.*—To facilitate the swivelling of the jib and load in one direction, by inclining the post out of the vertical position, the crane-post is secured to its footstep by means of a universal joint.

2,754. DOVETAILING MACHINERY: *R. Carlyle & R. D. Shannon.*—The invention applies to a machine which has a rotating conical cutter that cuts the dovetail in both boards at one operation; the boards are clamped, at right angles to one another, upon a table or frame adapted to slide in two rectangular directions, bevel gearing rotates, on a vertical axis, the inverted conical cutting tool, the boards are fed against the tool, then pulled back, and then pushed forward a step for the next dovetail to be cut in them, by means of a wheel having a single tooth that gears into a rack fixed upon the frame, a cam effecting the necessary advance of the boards to the cutting-tool, and the table being locked by a pin moved by a cam-groove whilst the cutting is being done.

PRICES CURRENT OF MATERIALS:

WOOD.*

Per Petersburg standard hundred.

	£ s. d.	£ s. d.
White Sea: first yellow deals	17 0 0	18 0 0
Second do.	13 5 0	14 15 0
Third do.	10 15 0	11 15 0
Battens, 40s., 30s., and 15s. less respectively.		
Petersburg: first yellow deals	11 15 0	14 5 0
Second do.	10 15 0	12 5 0
Battens, 30s. and 20s. less respectively.		
Petersburg, white deals	9 15 0	11 15 0
Do. white battens	7 10 0	9 0 0
Riga, white deals	8 5 0	9 5 0
Swedish mixed yellow deals	13 5 0	16 15 0
Third do.	12 5 0	14 5 0
Fourth do.	10 15 0	11 15 0
Fifth do.	9 15 0	10 15 0
Battens, 30s., 20s., and 10s. ess respectively.		
Whitewood, 10 to 20 per cent. less.		
Finnish unsorted yellow deals	9 15 0	10 5 0
Battens, 10s. and 5s. less respectively.		
Whitewood, 5 to 10 per cent. less.		
Norwegian second yellow battens	7 10 0	8 10 0
Third do.	7 0 0	8 0 0
Fourth do.	6 10 0	7 10 0
Whitewood, 10s. less.		
Danzig, Crown Deck deals, per 40 ft. 3 in.	0 15 0	1 5 0
Brack	0 12 0	1 0 0
St. Lawrence Pine deals, &c., per P.S.H.:—		
1st, Bright and Dry, regular sizes	19 0 0	25 10 0
,, ,, oddments	12 0 0	18 15 0
2nd ,, regular sizes	14 0 0	17 5 0
,, ,, oddments	9 10 0	13 0 0
3rd ,, regular sizes	9 5 0	10 5 0
,, ,, oddments	7 0 0	8 10 0
4th ,, regular sizes	6 5 0	7 5 0
,, ,, oddments	5 15 0	6 15 0
St. Lawrence Spruce deals, &c.		
First, regular sizes	8 5 0	10 5 0
Second ,,	7 5 0	8 5 0
Third ,,	7 0 0	7 15 0
Fourth ,,	5 15 0	6 15 0
Oddments and battens at 20s., 10s., 7s. 6d., and 5s. less respectively.		
New Brunswick Spruce deals, &c.	7 0 0	7 15 0
Oddments, battens, and fourths	6 5 0	7 5 0
United States pitch pine planks and boards	8 15 0	12 5 0
Prepared Boards, per square		
1½ by 6½ and 7 in. 1st yellow	11 9	15 0
,, ,, 2nd ,,	10 3	12 0
1 by 6½ and 7 in. 1st ,,	8 9	11 0
,, ,, ,, white	8 3	9 0
,, ,, 2nd yellow	8 3	10 0
,, ,, ,, white	6 9	7 6
⅞ by 6½ & 7 in. 1st & 2nd yellow	7 6	8 3
,, ,, ,, white	7 0	7 9
¾ by 6½ and 7 in. 1st yellow and white (grooved, tongued, and beaded)	6 6	9 0
⅔ by 6½ and 7 in. 2nd yellow and white (ditto)	5 6	7 9
⅝ by 6½ and 7 in. 1st yellow and white (ditto)	5 6	6 3
⅝ by 6½ and 7 in. 2nd yellow and white (ditto)	5 0	5 9
Narrower widths at 10 per cent. less.		
3rd quality at 15 per cent. less than 2nd.		
Danzig and Memel Fir Timber— per load		
Best middling	2 7 6	3 7 6
Good middling and Second	1 17 6	3 2 6
Common middling	1 7 6	2 7 6
Undersized	1 7 6	1 12 6
Swedish and Norwegian Balks	1 2 6	1 12 6
Baltic Oak Timber—		
Danzig and Stettin—Large	3 15 0	4 5 0
Small	2 5 0	2 10 0
Quebec Timber per load		
Yellow Pine	4 17 6	6 10 0
Oak	4 5 0	6 5 0
Elm	4 5 0	5 5 0
Ash	3 10 0	4 15 0
Birch	3 15 0	5 15 0
New Brunswick, &c., Birch	2 10 0	3 5 0
American Pitch Pine Timber	2 16 0	3 5 0
Wainscot, per log, 18 cubic ft.—		
Crown (Eng. & Dutch) } nominal	4 5 0	6 0 0
Brack } nominal	3 10 0	4 10 0
Lathwood, per cubic fathom—		
Petersburg	4 0 0	6 10 0
Riga and Danzig	4 10 0	5 10 0
Norway Poles, per ft. run	0 0 1	0 0 1½
Oak Staves, per mille full size pipe		
Memel, Crown	210 0 0	220 0 0
Brack	180 0 0	190 0 0
Danzig	165 0 0	175 0 0
Bosnia, single Barrel (nominal)	28 0 0	30 0 0
United States, Pipe	35 0 0	42 10 0
Hogshead, extra heavy and double extra	27 10 0	32 10 0
Indian Teake per load	11 10 0	16 10 0
British Guiana Greenheart	0 0 0	8 0 0
Mahogany, per foot superficial—		
Honduras, cargo average	0 0 4½	0 0 6
Nicaragua, do.	0 0 4½	0 0 5½
Tabasco, do.	0 0 4	0 0 6½
Mexican, do.	0 0 3½	0 0 4

* The prices for wood are shipping prices. Ten per cent., approximately, should be added in order to arrive at the current trade prices.

	£	s.	d.	£	s.	d.
Panama, do.	0	0	3	0	0	4
African, do.	0	0	3½	0	0	5
Cuba, do.	0	0	5½	0	0	7½
St. Domingo, do.	0	0	5	0	0	7
Do. Curls (good to prime)	0	0	9	0	1	3
Walnut, American (logs)	0	2	0	0	4	6
Do. do. (planks and boards)	0	2	0	0	7	6
Italian, per foot superficial	0	0	3	0	0	7½
Black Sea, per ton	6	0	0	12	0	0
Satin Walnut (logs) per foot cube	0	1	0	0	1	3
" " (planks and boards)	0	2	0	0	2	9
Sequoia (Californian redwood), per foot cube	0	1	9	0	2	0
Whitewood, American (logs)	0	1	3	0	1	6
" " (planks and boards)	0	1	6	0	2	9
Quartered oak " " "	0	2	3	0	4	0
Kauri pine (logs)	0	1	9	0	2	0
" " (planks)	0	2	3	0	2	9
Jarrah (planks)	0	2	3	0	2	6
Lancewood spars each, fresh and large	0	7	0	0	10	0
Lancewood spars, ordinary to fair	0	4	0	0	6	0
Degame spars	0	8	0	0	12	6

METALS.

IRON—Pig, in Scotland ton	3	4	7½	0	0	0
Bar, Welsh, in London	6	0	0	6	5	0
Do. do. at works in Wales	5	15	0	5	17	6
Do. Staffordshire, in London	6	5	0	7	10	0
COPPER—British cake and ingot	80	0	0	80	10	0
Best selected	80	10	0	81	0	0
Sheets, strong	82	10	0	84	10	0
Chili bars	76	5	0	0	0	0
YELLOW METAL lb.		7d.			7½d.	
LEAD—Pig						
Spanish ton	14	5	0	0	0	0
English Com. Brands	14	10	0	0	0	0
Sheet, English, 6 lbs. per sq. ft. and upwards	15	10	0	0	0	0
Pipe	16	0	0	0	0	0
ZINC—English sheet ton	31	0	0	0	0	0
Vieille Montagne	31	10	0	0	0	0
Spelter	28	10	0	28	12	6
TIN—Straits	118	2	6	0	0	0
Australian	118	5	0	118	15	0
English Ingots	120	10	0	121	10	0
Banca	114	0	0	0	0	0
Billiton	113	0	0	0	0	0

OILS.

Linseed ton	19	17	6	0	0	0
Cocoanut, Cochin	29	5	0	0	0	0
Do. Ceylon	25	15	0	0	0	0
Palm, Lagos	24	0	0	0	0	0
Rapeseed, English, pale	22	15	0	0	0	0
Do. Brown	21	5	0	0	0	0
Cottonseed ref.	16	5	0	17	0	0
Oleine	17	0	0	19	0	0
Lubricating U.S.	0	5	6	0	7	6
Do. Black	0	5	0	0	6	0
TAR—Stockholm barrel	1	6	6	0	0	0
Archangel	1	0	0	0	0	0
Turpentine	33	15	0	0	0	0

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

May 16.—By E. H. HENRY.

Wandsworth.—60, Devereux-rd., u.t. 91½ yrs., g.r. 10*l.* £535

By PIGGOTT & SON.

Hammersmith.—27, The Grove, u.t. 48 yrs., g.r. 6*l.*, e.r. 50*l.* 420

By F. S. PRIEST.

Harlesden.—25, Connaught-rd., u.t. 78 yrs., g.r. 9*l.*, e.r. 45*l.* 500

By RUSHWORTH & STEVENS.

Stratford.—96, Chapel-st., and 1 to 6, Spray's-bdgs., f. 1,240

Walworth.—16, 17, and 18, Sondes-st., u.t. 73 yrs., g.r. 10*l.* 156

Pimlico.—33 to 39 (odd), Chapter-st., also l.g.r. 33*l.*, u.t. 3 yrs., g.r. 55*l.* 170

By PHILIP STOCK.

Clerkenwell.—3 and 4, St. John's-lane, area 2,250 ft., f. 2,400

Herne Hill.—57, Railton-rd., u.t. 69 yrs., g.r. 8*l.*, r. 40*l.* 300

By E. FERGUSSON TAYLOR.

New Barnet, Herts.—Station-rd., West Barnet Lodge, and ¾ acre, f. 3,260

Gloucester-rd., Jesmond Cottage, f., r. 50*l.* 590

By W. N. WILLOUGHBY.

Streatham.—41 and 43, Knolly's-rd., u.t. 87 yrs., g.r. 20*l.*, r. 120*l.* 980

By WOODS & SNELLING.

Holloway.—31 to 45 (odd), Brand-st., f. 1,030

Old Kent-rd.—19 to 31 (odd), Green Hundred-rd., f. 745

Brockley.—184 to 194 (even), Adelaide-rd., u.t. 62 yrs., g.r. 39*l.* 10s., r. 230*l.* 2,150

Sydenham.—Burghill-rd., Burgoyne and East Dean, u.t. 89 yrs., g.r. 14*l.*, r. 70*l.* 695

By BEADEL, WOOD, & CO.

Blackheath.—Westcombe Hill, Combe Farm, 2 a., f. 4,100

Horn-lane, a block of building land, 6 a., f. 3,000

Woolwich-rd., an enclosure of building land, 26 a., f. 10,500

Station Villas, f.g.r. 29*l.*, reversion in 71 yrs. .. 760

Westcombe Hill, f.g.r. 8*l.* 10s., reversion in 71 yrs. 250

Bridge-ter., f.g.r.'s 79*l.* 16s., reversion in 72 yrs. 1,925

Horn-lane, f.g.r. 9*l.* and two peppercorn ground-rents, reversions in 72 and 87 yrs. 325

Bridge-ter., f.g.r.'s, 23*l.* 2s., reversion in 72 yrs. 610

Aldeburgh-st., f.g.r.'s 110*l.* 4s., reversion in 72 yrs. 3,050

Edith-ter., f.g.r.'s, 64*l.*, reversion in 82 yrs. 1,730

The Pavement, f.g.r.'s 72*l.*, and a peppercorn, reversion in 77 yrs. 2,120

Belle Vue-ter., f.g.r. 9*l.* 9s., reversion in 85 yrs.. 260

Belle Vue-ter., f.g.r. 13*l.*, reversion in 82 yrs. ... 355

By FLEURET, SONS, & ADAMS (at Masons' Hall Tavern).

City of London.—Aldersgate-st., "The Red Lion" p.-h., u.t. 37½ yrs., r. 125*l.*, with goodwill.... 21,000

St. John's Wood.—Loudoun-rd., "The Alexandra Hotel," u.t. 58½ yrs., r. 8*l.*, with goodwill .. £9,510

By HASLAM & SON (at Reading).

Southcot, Berks.—A freehold meadow and osier ground, 14 a. 0 r. 33 p. 650

By H. A. WOOFF (at Christchurch).

Christchurch, Hants.—Wick Dairy Farm, 69 a. 3 r. 6 p., f. 3,050

Enclosures of building land, 2 a. 2 r. 11 p., f. .. 630

Enclosures of land, 7 a. 2 r. 26 p., f. 740

May 17.—By REGINALD L. CANEY.

Hackney.—23 and 25, Teesdale-st., u.t. 31 yrs., g.r. 3*l.* 380

Bedford.—27 and 29, Castle-lane, f., r. 25*l.* 400

By C. RAWLEV CROSS & CO.

Kensington.—14, Fielding-rd., u.t. 73 yrs., g.r. 12*l.*, e r. 45*l.* 300

Shepherd's Bush.—38 and 40, Bloemfontein-av., u.t. 80¾ yrs., g.r. 10*l.* 625

By FOSTER & CRANFIELD.

Gravesend.—70, Windmill-st., f., e.r. 60*l.* 590

Hackney.—254, Richmond-rd., u.t. 46 yrs., g.r. 4*l.*, r. 33*l.* 345

Kentish Town.—25 and 29, Quadrant-grove, u.t. 51 yrs., g.r. 16*l.*, r. 68*l.* 585

By HAROLD GRIFFIN.

Battersea.—2, 4, and 6, Totteridge-rd., u.t. 79 yrs., g.r. 15*l.* 650

35, Harroway-rd., u.t. 79 yrs., g.r. 5*l.* 215

23, Urswick-rd., u.t. 79 yrs., g.r. 5*l.* 225

Worcester Pk., Surrey.—1, 2, and 3, St. Martin's-pl., f. 480

By PROTHEROE & MORRIS.

Epping, Essex.—Hartland-rd., a block of building land, f. 240

By E. W. RICHARDSON & SON.

Regent-st.—5, 7, 15, 17, 19, and 21, Foubert's-pl., f., r. 413*l.* 8,110

By ROGERS, CHAPMAN, & THOMAS.

South Kensington.—31, Courtfield-gardens, u.t. 74 yrs., g.r. 35*l.* 1,810

By R. TIDEY & SON.

De Beauvoir Town.—18, Southgate-rd., u.t. 27 yrs., g.r. 5*l.* 5s., r. 50*l.* 360

147, Southgate-rd., u.t. 28 yrs., g.r. 6*l.*, e.r. 48*l.* 425

Wood Green.—5, Caxton-rd., u.t. 76 yrs., g.r. 4*l.*, r. 26*l.* 270

Tottenham.—404, West Green-rd., u.t. 78 yrs., g.r. 7*l.* 10s., r. 45*l.* 450

By J. W. WEST & CO.

Leytonstone.—Mayville-rd., f., g.r. 30*l.* 10s., reversion in 98 yrs. 805

By BELTON & SONS (at Horse Shoe Hotel).

Greenwich.—King George-st., "The Woodman" p.-h., a freehold rental of 63*l.*, reversion in 20 yrs. 1,260

Haggerston.—Mayfield-rd., "The Crown" p.-h., an improved rental of 30*l.* for 37 yrs. 870

By LOUND & HOWITT (at Horse Shoe Hotel).

Richmond, Surrey.—Red Lion-st., "The Red Lion" p.-h., and 1 and 2, Ormond-passage, u.t. 21 yrs., r. 495*l.*, with goodwill 2,650

By TOOTH & TOOTH (at Oxenham's).

Paddington.—2 and 8, Delamere-st., u.t. 49 yrs., g.r. 14*l.* 14s., r. 110*l.* 950

18 and 20, Marlborough-st., u.t. 446 yrs., g.r. 14*l.*, r. 76*l.* 720

Kilburn.—28, 38, and 40, Cambridge-av., u.t. 59½ yrs., g.r. 15*l.*, r. 160*l.* 1,520

Oxford-st.—142 and 144, Wardour-st., u.t. 14½ yrs., g.r. 250*l.*, r. 837*l.* 16s. 3,000

By CHADWICK & SONS (on the premises).

Hyde Pk.—18, Hyde Park-sq., and 15, Hyde Park-sq.-mews, u.t. 35¾ yrs., g.r. 49*l.* 7s., e.r. 285*l.* 2,300

By Messrs. SPELMANS (at Norwich).

Norwich—1, Albany-rd., u.t. 60 yrs., g.r. 1*l.*, r. 16*l.* 200

32 to 54 (even), Gladstone-st., f. (in lots) 1,854

By WYATT & SON (at Chichester).

Woodmancot, Sussex.—A copyhold cottage, r. 8*l.* 130

By NOCK & JOSELAND (at Wolverhampton).

Bilbrook, Staffs.—Two enclosures, 13 a. 1 r. 17 p., f. 630

Enclosure of building land, 7 a. 1 r., f. 405

A freehold cottage and 15 a. 0 r. 3 p. 450

May 18.—By FAREBROTHER, ELLIS & CO.

St. John's Wood.—72, Boundary-rd., u.t. 38½ yrs., g.r. 10*l.* 1,000

By HEAPS, SON, & REEVE.

Battersea.—173 to 179 (odd), Lavender-rd., u.t. 25 yrs., g.r. 10*l.* 420

27 and 28, Simpson-st., u.t. 57 yrs., g.r. 10*l.* 10s. 465

By C. C. & T. MOORE.

Mile End.—49 and 51, Mile End-rd., u.t. 245 yrs., g.r. nil 2,750

Bow.—16, Addington-rd., u.t. 47½ yrs., g.r. 5*l.*, e.r. 45*l.* 390

Dulwich.—76, Melbourne-grove, u.t. 76 yrs., g r. 6*l.* 10s., r. 30*l.* 300

St. Luke's.—40, New Charles-st., u.t. 43 yrs., g.r. 5*l.*, r. 30*l.* 320

Clerkenwell.—31, Sekforde-st., u.t. 14 yrs., g.r. 4*l.* 4s., r. 40*l.* 210

By G. TROLLOPE & SONS.

Bayswater.—4, James-st., u.t. 39½ yrs., g.r. 9*l.* 590

By WRIFORD & DIXONS.

Shepherd's Bush.—143, Askew-rd., u.t. 67 yrs., g.r. 12*l.*, r. 60*l.* 600

Kentish Town.—38, Leighton-grove, u.t. 42 yrs., g.r. 6*l.* 6s., e.r. 40*l.* 180

By NEWBON, EDWARDS, & SHEPHARD.

King's Cross.—146 and 146A, King's Cross-rd., f., r. 150*l.* 2,500

Hackney.—136, Mare-st., f., r. 154*l.* 2,500

Islington.—144, 145, and 146, Upper-st., f., r. 189*l.* 4,500

43, 45, and 47, Queensbury-st., reversions in 11 and 17 yrs., g.r. 11*l.* 5s. 240

Dalston.—76 and 78, Queen's-rd., u.t. 26 yrs., g.r. 12*l.* 10s., r. 50*l.* 400

Highbury.—71, Sotheby-rd., u.t. 80½ yrs., g.r. 10*l.* 10s., e.r. 65*l.* 595

17, Aberdeen-road., u.t. 60 yrs., g.r. 9*l.*, r. 45*l.* 470

Hornsey Rise.—56, Ashley-rd., u.t. 76 yrs., g.r. 6*l.* 10s., r. 50*l.* 485

Canonbury.—11, Spencer-st., u.t. 18 yrs., g.r. 6*l.*, e.r. 46*l.* 320

Tottenham.—342, 344, and 346, West Green-rd., u.t. 69½ yrs., g.r. 15*l.* 15s., r. 72*l.* 645

New Southgate.—11 and 15 to 19, Lee-street., u.t. 82½ yrs., g.r. 24*l.* 515

Haverstock Hill.—No. 37, u.t. 34 yrs., g.r. 11*l.*, r. 80*l.* £725

By STIMSON & SONS.

Hyde Park.—46, Connaught-sq., and 75, Frederick Mews, u.t. 20 yrs., g.r. 17*l.*, r. 216*l.* 1,400

60, Oxford-ter. and 4, Devonport-mews, u.t. 33 yrs., g.r. 14*l.*, e.r. 150*l.* 1,000

Bayswater.—97, Ledbury-rd., u.t. 47½ yrs., g.r. 9*l.*, r. 50*l.* 415

88 and 90, Talbot-rd., u.t. 47½ yrs., g.r. 21*l.* 965

9 and 11, Burlington-mews West, u.t. 60 yrs., g.r. 8*l.* 8s. 335

Westbourne Pk.—204, Kensal Pk., u.t. 67 yrs., g.r. 8*l.* 205

Fulham.—41 and 43, Waterford rd., u.t. 57½ yrs., g.r. 6*l.* 10s. 550

Brixton.—362, Brixton-rd., u.t. 16 yrs., g.r. 10*l.*, r. 60*l.* 340

Norwood.—7, St. Aubyn's-rd., u.t. 60 yrs., g.r. 8*l.*, r. 40*l.* 310

By S. & G. KINGSTON (at Holbeach).

Whaplode, Lincs.—The Bridge Farm, 42 a. 3 r. 35 p., f. 2,400

By ELLIOTT, ELLIS, & CO. (at Plymouth).

Harford, Devon.—Meads Farm, 24 a. 0 r. 22 p., f. 1,220

By DYER, SON, & HILTON (at Bromley).

Eltham, Kent.—Grove Park-rd., two freehold building plots 234

By WINCH & SONS (at Maidstone).

Marden, Kent.—Gravel Pit Farm, 107 a. 2 r. 13 p., f. 4,000

Enclosures of meadow, 17 a. 1 r. 27 p., f. 610

Horlands Wood, 10 a. 3 r. 17 p., f. 220

By T. WALKER & SONS.

Tollerton, Yorks.—Various enclosures of land, 94 a. 1 r. 25 p., f. 3,325

Alne, Yorks.—Enclosures of land, 21 a. 1 r. 27 p., f. 920

By THOMAS MARTIN (at Exeter).

Exeter, Devon.—4, Richmond-grove, f. 300

96, Fore-st., f., e.r. 60*l.* 500

May 19.—By COOPER & GOULDING.

Stoke Newington.—29, Mildmay Pk., f., e.r. 55*l.* 925

By Messrs. CRAWTER.

Balham.—20, Byrne-rd., u.t. 75½ yrs., g.r. 7*l.* 10s., r. 34*l.* 295

Cheshunt.—Prospect-pl., Folkvang, f., r. 40*l.* 520

By ROBINS, GORE, & MERCER.

Homerton.—Daubeney-rd., two plots of building land, f. 125

By E. & S. SMITH.

Muswell Hill.—Sydney-rd., two plots of building land, f. 260

By EDWARD WOOD.

Deptford.—27 to 33 (odd), Baildon-st., u.t. 27 yrs., g.r. 18*l.* 250

Anerley.—4, Weighton-rd., u.t. 66 yrs., g.r. 15*l.*, e.r. 50*l.* 255

Herne Hill.—129, Railton-rd., u.t. 69 yrs., g.r. 9*l.*, r. 42*l.* 280

Leyton.—1, Thornton-rd., u.t. 97 yrs., g.r. 4*l.* 10s., r. 24*l.* 225

By THOMAS WRIGHT.

Beckenham, Kent.—4 to 14 (even). Kelsey Pk.-rd., and 7, 8, and 9, Stanmore-ter., f. 5,350

86, High-st., u.t. 51½ yrs., g.r. 26*l.*, r. 51*l.* 240

Chelsea.—6, 23, 24, 26, and 41 to 45, Slaidburn-st., u.t. 55 yrs., g.r. 43*l.* 5s. 1,530

36, Slaidburn-st., u.t. 55 yrs., g.r. 18. 200

By G. B. SMALLPIECE (at Woking).

Woking, Surrey.—Mount Hermon-rd., a plot of building land, f. 180

York-rd, two plots of building land, f. 245

By CHURTON, ELPHICK, & CO (at Chirk).

Weston Rhyn, Salop.—Weston Farm, 38 a. 2 r. 15 p., f. 1,900

Enclosures of land, 9 a. 3 r. 38 p., f. 1,110

Cae Meddyg Cottages and 2 r. 8 p., f. 270

Weston Cottage and 9 a. 1 r. 6 p., f. 900

Wern-y-Groes House and 14 a. 2 r. 22 p., f. 880

The "Plough Inn" and 1 a. 1 r. 35 p., f. 1,600

Glendrid Cottages and 2 r. 1 p., f. 520

Chirk, Denbigh.—Croggen Iddon Farm, 206 a. 1 r. 38 p., f. 3,400

May 20.—By C. M. STANFORD (at Clacton-on-Sea).

Little Clacton, Essex.—Swain's Farm, 75 a. 2 r. 32 p., f. 2,200

Enclosures of land, 20 a. 3 r. 6 p., f. 500

By MOORE, GARRARD & SON (at Framlingham).

Wilby, Suffolk.—The Lane Farm, 44 a. 1 r. 4 p., f. 450

May 23.—By CHANCELLOR & SONS.

Bagshot, Surrey.—Lightwater-rd., Belle Vue and 7 a., f. 2,200

By RUTLEY, SON, & VINE.

Islington.—249 and 251, Liverpool-rd, f., r. 80*l.*.. 1,210

Haverstock Hill.—46, 47, and 48, Maitland Park-rd., u.t. 53 yrs., g.r. 12*l.*, r. 118*l.* 1,345

By WYATT & SON (at Havant).

Havant, Hants.—50, West-st., f. 500

2, 3, 4, and 5, Staunton-rd., f. 565

By THORNBORROW & CO. (at Penrith).

Penrith, Cumberland.—The Stoneybeck Estate, 79 a. 0 r. 12 p., f. 2,325

May 24.—By ALDRIDGE, DOUGLAS, & CO.

Croydon.—Penn-rd., Conishead, f., r. 75*l.* 1,250

By BAXTER, PAYNE, & LEPPER.

Bromley, Kent.—Elmfield-rd., Oakdene, f., r. 70*l.* 1,000

Eltham, Kent.—18, West Chislehurst Pk., u.t. 86 yrs., g.r. 10*l.*, r. 55*l.* 385

Sutton, Surrey.—Sherwood Park-rd., a plot of building land, f. 210

By BROWETT & TAYLOR.

Banstead, Surrey.—Reigate-rd., The Gables and 1½ a., f. 1,100

Finsbury Pk.—44, Osborne-rd., u.t. 79 yrs., g.r. 7*l.*, e.r. 40*l.* 430

Islington.—11, Canonbury-rd., u.t. 19½ yrs., g.r. 6*l.*, r. 40*l.* 210

Beckenham.—23, Clock House-rd., u.t. 90 yrs., g.r. 7*l.*, r. 34*l.* 330

By CURTIS & SHARP.

Barking.—18, 20, and 22, Broadway, f. 1,235

32, Broadway, f., r. 35*l.* 1,000

5, 6, and 7, Back-lane, f. 315

1, Tanner-st., f., r. 50*l.* 1,150

Mover's-la., two parcels of land, 6 a., f. 780

Plaistow.—19 and 27, Stock-st., u.t. 67 yrs., g.r. 8*l.* 310

2, 4, 6, and 8, Maud-rd., u.t. 70 yrs., g.r. 16*l.* .. 540

90 and 92, Chesterton-rd., u.t. 83 yrs., g.r. 9*l.* .. 300

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c. Supplied by	Tenders to be delivered.
*Infirmary Wards, &c. at Workhouse	Tendring Union, Essex	F. Whitmore, Chelmsford	June 6
Eighteen Houses, Argoed, Mon.	.....	N. T. Price, Archt. 32, High-st Argoed	do.
Chimney Stack	Buxton U.D.C.	F. Cartwright, Surv. 22, High-st. Sheffield	do.
Two Houses, Glendale-rd. Wooler	W. & L. Atkinson	W. R. Hindmarsh, jun. Archt. Ainwick	do.
Laundry Buildings, Stoney Royd	Halifax Corp.	E. R. S. Escott, U.E. Town Hall	do.
Four Houses, Bellevue-road, Sandal Yorks.	.....	W. Wynn, C.E. 10, Living-stone-st Leeds	do.
Road Works, Cranworth-street	Bootle Corp.	Boro Engr. Town Hall	do.
Water Supply	Pympton St. Mary R.D.C.	F. A. Clark, Surv. Old Town-st. Plymouth	do.
Additions to Steading, Fisherford, N.B.	..	J. Duncan & Son, Archt. Turriff	do.
Steel Girders (715 tons)	G. W. Ry. Co.	G. K. Mills, Paddington Station, W.	do.
Sewers, Netherby-road	Leith Corp.	Burgh Surv. Town Hall	do.
Granite Road Metal (3,100 tons)	Enfield U.D.C.	R. Collins, Surv. Court House, Enfield	June 7
Concrete Sea Wall	Saltcoats (N.B.) Comrs.	J. & H. V. Eagleham, Engr. Ayr	do.
Filter Tanks, Larkhall, N.B.	.....	Leslie & Reid, C.E. 72A, George-st Edinburgh	do.
Dwellings, St. James's-road	Glasgow Corp.	City Engr. 64, Cochrane-st. Glasgow	do.
Business Premises, Broad-street, Somerton	E. W. Valentine.	Bowring & Hawkins, Archt Post Office - chambers, Glastonbury	do.
Technical Instruction Buildings	Rugby U.D.C.	D C. Macdonald, C E Rugby	do.
Houses and Bakery, Strand-road Derry	Carruthers & M'Bride	D. Conroy, Archt. 2 Bishop-st. Londonderry	do.
Shop and House, Dracup-road, Gt. Horton	.....	S Spencer, Archt. 344, Gt. Horton-road, Bradford	do.
Waterworks	Crawley Water Co.	C O. Blaber, C.E. 64, Ship-st. Brighton	do.
Paving, &c. Fitzhamon Embankment	Cardiff Corp.	W. Harpur, C E. Town Hall	do.
Sewers, near Docks, Port Talbot	.....	F B. Smith, C.E. Port Talbot	do.
Water Supply, Pinxton, Derby	Blackwell R.D.C.	F. Walker, C.E. Newcastle chmbrs. Nottingham	do.
Offices and Stores at Gasworks, Quakers' Yard, Glam.	.....	G. Davies, Gasworks, Treharris, Glam.	do.
*Making-up and Paving Road	Fulham Vestry	C. Botterill, Town Hall, Walham Green, S W.	do.
Nine Houses, Aberaman	Victoria Building Club	J. L. Smith, Archt. 20, Commercial-st. Aberdare	June 8
Club House, Penarth	Glamorganshire Golf Club	J. W. Rodger, Surv. 14, High-st. Cardiff	do.
Tar Paving Works	Southampton Corp.	W. B. G. Bennett, Boro Engr. Municipal-bldgs.	do.
Club Premises, Dyson-road, Halifax	.....	Medley Hall, Archt. 29, North-gate, Halifax	do.
Sewer, Hurstpierpoint	Cuckfield R.D.C.	H. E. Cripps, Holly Cottage, Sidney-road, Hayward's Heath	do.
*Portland Cement	Brighton Corp.	F. J. C. May, Town Hall	June 9
Schools, Percy Main	Tynemouth Sch. Bd.	F. R. N. Haswell, Archt. Tyne-st. North Shields	do.
Rectory, Portrush, Ireland	.....	H Seaver, Archt. 128, Royal-avenue, Belfast	do.
Additions to National Schools, Brownhill, Dewsbury	.....	Holtom & Fox, Archt. Westgate, Dewsbury	do.
Library, Cheltenham-rd.	Bristol Corp.	W W Gough, Archt. 24, Bridge-st. Bristol	do.
*Coastguard Buildings	Admiralty	Offices, 21, Northumberland-avenue, W.C.	do.
*P. O. Balham	Commrs. H.M. Works	J. Wager, Offices, Storey's Gate, S.W.	do.
Thirty Houses	Cwmaman Building Club	L. Smith, 20, Commercial-st. Aberdare	June 10
Street Works (22 streets)	Kettering U.D.C.	T. R. Smith, Surv., Market Hill, Kettering	do.
Farm Buildings, &c. Packington	Ashby-de-la-Zouch U.D.C.	J. B. Everard, C.E. 6, Millstone-lane, Leicester	do.
Forming Goulbourne-st. Keighley	..	Barber, Hopkinson & Co. Archt. Keighley	do.
Granite Road Metal	Ely U.D.C.	W. McKelvie, Surv. Ely	do.
New Streets, off Victoria-rd. Elland	.....	C. F. L. Horsfall & Son, Archt. Lord-st Chmbrs. Halifax	do.
Walls, &c. at Workhouse	Cardiff Union	E. Seward, Archt. Queen's-chambers, Cardiff	do.
Villa, Sunnyside, nr. Montrose	Montrose Royal Asylum	J. Sim, Archt. 160, High-st. Montrose	do.
*Renewal and Repairs to Gymnasium Apparatus	L.C.C.	Parks' Dept 9, Spring-gardens, S.W.	June 12
*Sand, Ballast, Stone, Drain Pipes, Wood Blocks, &c.	St Martin's-in-the-Fields Vestry	G. Green, Town Hall, Charing Cross-rd. W.C.	do.
Re-building Cock Inn, Shaw	Newbury Brewery Co.	J. H. Money, Archt. Newbury	do.
Concrete Dam, Llyn Brau, Denbigh	Asylum Visitors	J. T. Wood, C.E. 3, Cook-st. Liverpool	do.
Police Cottages, &c. Hartley-row	Hants C.C.	W. J. Taylor, Cnty. Surv. The Castle, Winchester	do.
Water Supply, Blackwood, Lanark	.....	Warrend Stuart, C.E. 115, Wellington-st. Glasgow	do.
Boundary Walls, St. Paul's-road, Seacombe	Wallasey U.D.C.	W. H. Travers, Surv. Public Offices, Egremont	do.
Two Houses, &c. Brunswick-street, Whitby	T. Parratt	R. Lennard & Son, Archt. Cliff st. Whitby	do.
Cattle Shed, &c. Field House Farm Awre, Gloucester	Trustees.	T. Cadle, Lynwood, Denmark-rd. Gloucester	do.
Hotel, Cadoxton, Wales	R. E. Bevan	J. C. Rees, Archt. Neath	do.
Destructor Buildings	Barry U.D.C.	J. C. Pardoe, C.E. Holton-rd Barry	do.
Sewers	Market Harborough U.D.C.	J. B. Everard, C.E. 6, Millstone-ln. Leicester	June 13
Widening Line and Erecting Stations, Bolton	L. & Y. Ry. Co.	C. W. Bayley, Hunt's Bank, Manchester	do.
Lodge, nr. Hospital	Kidderminster T.C.	A. Coomber, Boro. Surv. Town Hall	do.
*Pitching and Private Street Works	Cnty. Boro. West Ham	Lewis Angell, Town Hall, Stratford, E.	do.
*Brick and Concrete Sewer	Lewisham B. of W.	Surv. Dept. Town Hall, Catford, S E.	do.
*Kerbing, Tar Paving, &c.	do.	do.	do.
*Painting, Whitewashing, &c.	Chelsea Guardians	W. Miller, 250, King's-rd. Chelsea	do.
*Granite Spalls and Broken Granite	Hackney Vestry	J. Lovegrove, Vestry Hall	June 14
*Granite Curb and Cubes	Greenwich B. of W.	Offices, 141, Greenwich-rd. S.E.	do.
*Builder's Work connected with Water Tower	West Ham Union	Clerk at Workhouse, Leytonstone	do.
Sewers	Ryton-on-Tyne U.D.C.	J. P. Dalton, Engr. Council Offices	do.

CONTRACTS—*Continued.*

Nature of Work or Materials.	By whom Required.	Forms of Tender, &c. Supplied by	Tenders to be delivered.
Chimney Stack and Buildings, Edleston-rd. Crewe	.....	Hopkinson & Talbot, Engr 29, Princess-st. Manchester	June 14
Excavation Works	Shotley Bridge, &c. Gas Co.	Newnigging & Son, Engr 5, Norfolk-st. Manchester	do.
Earthenware Pipe Sewers (Contract No. 3)	Hurst U.D.C.	E. Garside, C.E. Town Hall Chmbrs. Ashton-under-Lyne	do.
Timber Quay and Shed, St. Andrew's Dock, Hull	N. E. Ry. Co.	P. M. Newell, Engr. Dock Office, Hull	do.
Schools, Victoria-rd. Lurgan, Ireland	.....	Young & Mackenzie, Archts. Donegall-square East, Belfast	do.
Cast Iron Water Mains	Winsford U.D.C.	H. Hulse, Surv. Market-place, Winsford	June 15
Burgh Buildings	Clydebank Burgh Comrs.	J. Miller, Archt. 223, West George-st. Glasgow	do.
*Re-drainage, Reservoirs, &c.	Kent County Asylums Com.	W. J. Jennings, 4, St Margaret-st. Canterbury	do.
Additions to Kent County Asylum Chartham	Visitors	W. J. Jennings, Archt. 4 St Margaret-st. Canterbury	June 16
Shops, &c. Victoria-rd. Sowerby Bridge, Yorks.	W. P. Eglin.	A. C. Williams, Archt. 29, Southgate, Halifax	do.
Electric Lighting Works	Dudley Corp.	Wilson & Story, 66, Victoria-st. S.W.	June 17
*Fifty-three Cottages and Five Blocks of Tenements	Tunbridge Wells Corp.	Borough Surveyor	June 19
*Towering and Making-up Roads	do.	do.	do.
Hospital, Spring Vale	Ardrossan, &c. Joint Hospital Com.	Fryers & Penman, Archt. Largs, N.B.	do.
Road Works	Wolverhampton Corp.	J. W. Bradley, C.E. Town Hall	do.
*Widening Bridge	County of Southampton	W. J. Taylor, The Castle, Winchester	do.
*Institute, Swimming Baths, Laundry, &c.	Beckenham U.D.C.	Council Offices	do.
*Fog Signal House, Dwellings, &c.	Trinity House Corp.	E. G. Verity, 31, Golden-sq. W.	do.
*Infirmary and Cottages	St. Marylebone Gdns.	A. Saxon Snell, 22, Southampton-bldgs. W.C.	do.
*Alterations, &c. to Cottage	Wimbledon U.D.C.	C. H. Cooper, Broadway, Wimbledon	do.
*Providing and Laying Urinals	Tottenham U.D.C.	P. E. Murphy, 712, High-rd. Tottenham	June 20
*Work in Erection of Hospital, also Heating, &c. Apparatus	Sheffield Corp.	Flockton, Gibbs, & Flockton, 15, St. James-row, Sheffield	do.
Schools	Sheerness Sch. Bd.	L. Grant, Archt. Sittingbourne	do.
Drainage Works	Dover T.C.	H. E. Stilgoe, C.E. Town Hall	do.
*Alterations at Schools	Penarth Sch. Bd.	Seddon & Carter, Bank-bldgs. St. Mary-st. Cardiff	do.
*Painting, &c. at Infirmary	Paddington Gdns.	E. Howley Sim, 8, Craig-ct. Charing Cross, W.C.	June 21
*Cottage Home Buildings and Additions to School	Isle of Thanet Union	L. Grant, High-st. Sittingbourne	do.
*Hospital	Basingstoke U.D.C.	J. Gibson, 3, New-st. Basingstoke	do.
Sewerage Works, Coulsdon	Croydon R.D.C.	R. M. Chart, Surv. Union Bank-chambers, Croydon	do.
*Granite Setts, &c. Stoneware Pipes, Gullies, and Gratings	Grays Thurrock U.D.C	A. C. James, High-st. Grays	June 22
Coast-guard Station, Lawrence Cove, co. Cork	Office of Public Works, Dublin	Carpenter in charge, Queen's College, Cork	do.
Three New Roads, Ashley Grange Estate, Cheriton, Kent	.....	Marler & Co. Surv. 95A, Gloucester-rd. S. Kensington	June 26
Farm Buildings, Hill End, St. Albans	Herts C.C.	G. T. Hine, Archt. 35, Parliament-st. S.W.	June 27
*Farm Buildings, Hospital, Cottages, &c.	Herts C.C.	G. T. Hine, 35, Parliament-st. S.W.	do.
*Alterations and Additions to Library	Brighton Corp.	F. J. C. May, Town Hall, Brighton	July 27
*Church and Schools, Worthing	.....	J. Wills, Victoria-chambrs, Derby	No date
*Four Pairs Semi-detached Houses, &c.	.....	C. M. Shiner, 3, Bond-st. Walbrook, E.C.	do.
*Schools, Thornton Heath	Croydon Sch. Bd.	H. Carter Pegg, 6, Sudbury-rd. Thornton Heath	do.
*Three Cottages, Willesden	.....	T. F. Shaw, 60, Nicoll-rd. Harlesden, N.W.	do.
*Painting	War Dept.	R. E. Office, Colchester	do.
*Painting, Sandhurst	do.	,, North Aldershot	do.
Sixteen Villas, Crouch End, N.	.....	Macer & Co. 29, Cheapside, E.C.	do.
Three Houses, Newark-st. Bradford	.....	F. Moore, Archt. 40, Sunbridge-rd. Bradford	do.
Brewery, Market Drayton	J. Wright & Son	T. Tindal, Archt. Longton, Staffs	do.
Two Houses, Summerland Hill Estate, Exeter	.....	J. A. Lucas, Archt. Guildhall-chambers, Exeter	do.
Alterations to "British Volunteer" Hotel, Cardiff	Ind, Coope, & Co.	Veall & Sant, Archt Cardiff	do.
Five Shops, Ormesby-rd. Middlesbrough	.....	T. M. Bulmer, Atlas Works, Middlesbrough	do.
Eight Cottages, Deepcar, Sheffield	E. Ogden	J. D. Townend, Surv. 21, Fargate, Sheffield	do.
Church, Thornaby-on-Tees	.....	Hicks & Charlewood, Archt. 67, Westgate-rd. Newcastle	do.
Villa, King-st. Duffield	.....	Sands & Walker, Archt. Angel-row, Nottingham	do.
Alterations to Premises, Wade-st. Leeds	.....	J. E. Preston, Archt. Chapel-Allerton, Leeds	do.
Three Villas, Wiverton-rd. Nottingh'm	.....	Collyer & Slater, Archt. 8. Bridlesmith-gate, Nottingham	do.
Cottage Residence, Walton-on-Thames	.....	G. L. Crickmay, Archt. 13, Victoria-st. S.W.	do.
Alterations to "Theatre Royal" Crook, co. Durham	L. M. Snowdon	J. W. Wardle, Archt. 25, King-st. South Shields	do.
Business Premises, High Wycombe, Bucks	McIlroy Bros.	T. Thurlow, Archt. High Wycombe	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in.
*Temporary Engineer's Assistant	Llandudno U.D.C.	2l. 2s. per week	June 10
*Officer to Superintend Repairs	Walthamstow Sch. Bd.	150l. per annum	do.
Assistant Engineer	Cardiff Corp.	150l. per annum	June 12
Road Surveyor	Tewkesbury R.D.C.	120l. per annum	June 16
Clerk of Works, Carlton	Barnsley R.D.C.	2l. 10s. per week	do.
*Clerks of Works (2)	Beckenham U.D.C.	4l. 4s. & 3l. 13s. 6d. per week	June 19

Those marked with an asterisk (*) are advertised in this Number. Competitions, p. —. Contracts, pp. iv. vi. vii. viii. x. & xx. Public Appointments, pp. xviii. & xx.

By E. W. RICHARDSON & SON.

Kingsland.—36, 38, and 40, Boleyn-rd., f.	£960
Wood Green.—Eldon-rd., f.g.r. 18l. 18s., reversion in 98 yrs.	460
Muswell Hill.—Coppett's-rd., six plots of building land; f.	330
Finchley.—5, 6, and 7, Brownlow-rd., u.t. 81 yrs., g.r. 15l.	405
New Southgate.—12, Palace-ter., f.	240

By J. S. RICHARDSON.

Walthamstow.—85, 87, 89, and 91, St. Andrew's-rd., u.t. 78 yrs., g.r. 26l.	370
1 and 2, Hope Villas, u.t. 83 yrs., g.r. 11l.	£280

By C. C. & T. MOORE.

Poplar.—Naval-row, "The Prince of Wales" p.-h., f., r. 100l.	3,200
St. George's East.—Grove-st., "The Jolly Sailors" b.-h., f., r. 38l.	1,000
Christian-st., "The Black Horse" b.-h., f., e.r. 50l.	900
Berner-st., f.g.r. 63l., reversion in 20 yrs.	3,050
Providence-st., &c., f.g.r. 78l. 15s., reversion in 20 yrs.	3,600
140, Cable-st., f., r. 40l.	365
Grove-st., a freehold factory	£2,750
44 to 70 (even) and 64½, Grove-st., f. (in lots)	5,390
83, 87 to 97 (odd), Grove-st., f. (in lots)	2,480

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.

TO CORRESPONDENTS.

C.—W. S.—(Amounts should have been stated). S. R. (Too late: next week).

NOTE.—The responsibility of signed articles, letters, and papers read at public meetings, rests, of course, with the authors.

We cannot undertake to return rejected communications.

Letters or communications (beyond mere news items) which have been duplicated for other journals are NOT DESIRED.

We are compelled to decline pointing out books and giving addresses.

Any commission to a contributor to write an article is given subject to the approval of the article, when written, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; those relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and *not* to the Editor

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays.* N.B.—We cannot publish Tenders unless authenticated by the name and address of the sender; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is given, nor any list in which the lowest Tender is under £100, unless in some exceptional cases and for special reasons.]

* Denotes *accepted.* † Denotes *provisionally accepted.*

ABERDEEN.—For the erection of schools, Mile End, for the School Board. Mr. A. H. L. Mackinnon, architect, 245, Union-street, Aberdeen. Quantities by architect :—

Masonry.—James Gauld*	£5,965 0 0
Carpentry.—Alex. Hall*	3,229 0 0
Slating.—Adam & Co.*	169 15 0
Plumbing.—J. F. Anderson†	610 0 0
Painting.—Mason & Son*	445 17 9
Plastering.—Stephen & Gibb*	968 0 0
Ironwork.—George Bisset*	299 13 0
Steelwork.—George Bisset*	406 17 11
	£12,024 3 8

[All of Aberdeen.]

BARRY (Glam.).—For additions to school, Clive-road (mixed department), for the School Board. Mr. G. A. Birkenhead, architect, St. Mary-street, Cardiff. Quantities by the architect :—

James & Son	£3,480 0 0	Jones Bros., Barry Dock*	£2,894 0 9
D. Davies	3,345 0 0	Richards & Evans	2,840 0 0
A. Richards	3,130 0 0	Thos. Davies	2,700 0 0
G. Rutter	3,116 1 4	W. Britton	2,692 0 0
T. Evans	3,080 4 0	Architect's Estimate	3,104 0 0
Price & Sons	3,058 0 0		
F. Couzens	2,998 0 0		
J. Pront	2,975 0 0		

BECKENHAM.—For erecting St Michael's Church, Birkbeck, Beckenham, Kent. Mr. A. H. Hoole, architect, Charing Cross, W.C. Quantities by Mr. J. H. Thomas, Acton, W. Section 1, chancel vestries and chapel; section 2, two bays of nave :—

	Section 1.	Section 2.
General Builders, Ltd.	£4,766	£1,726
Stephens, Bastow, & Co., Ltd.	4,199	1,797
Bunning & Sons	4,149	1,800
P. J. Kick	4,018	1,815
F. W. Green*	3,548	1,503

BOURNEMOUTH.—For the erection of certain sections of the New Boscombe Hospital. Mr. G. A. Bligh Livesay, architect. Quantities by Messrs. Jenning & Goater :—

George & Harding	£10,338 0 0	Jenkins & Sons	£9,179 0 0
Kingerlee	9,902 19 4	Miller & Sons*	8,940 0 0
Bastow & Co.	9,716 0 0		
Hoare & Sons	9,661 0 0		

* Accepted with operation block omitted.

BROMLEY (Kent).—For additions to "Glascoed." Mr. W. A. Williams, architect, 48, Cornhill, E.C. :—

Duthoit* £142

CARDIFF.—For the erection of shops and offices in James-street, Bute Docks, for Messrs. Rose & Co., engineers. Mr. Edgar G. C. Down, architect, Queen-street, Cardiff :—

T. Small	£2,618 0 0	G. Griffiths	£2,474 0 0
Knox & Wells	2,550 0 0	J. Allen	2,439 18 9
Shepton & Sons	2,534 10 0	Rees & Thomas	2,399 0 0
Jones Bros.	2,515 0 0	Thomas & Co.	2,367 0 0
Symonds & Co.	2,515 0 0	Evans Bros.	2,332 0 0
Lattey & Co.	2,487 0 0	Turner & Sons*	2,298 0 0
Cox & Bardo	2,483 0 0	Blacker Bros.	2,292 13 8

CARDIFF.—For making new roads and laying drains, near Whitchurch-road. Mr. E. H. Bruton, architect, 15, Queen-street, Cardiff :—

J. Ince	£438 13 4	Jones Bros.	£380 0 0
F. Ashley	430 8 6	E. H. Page	376 14 11
W. Marsh	412 0 0	Lattey & Co., Cardiff*	366 5 2
James Allen	405 0 0		
Barnes, Chaplin, & Co.	390 0 0		

CHELMSFORD.—For the erection of a house, Rainsford End, for Mr. A. Miller. Mr. C. Pertwee, architect, Bank Chambers, Chelmsford :—

Ernest West	£573	W. Drewry	£467
F. Weight	495	Gowers, Chelmsford*	460

CHESTER.—For the erection of public baths, Union-street, for the Corporation. Messrs. Douglas & Minshull, architects, Abbey-square, Chester. Quantities by the architects :—

Hughes & Stirling	£12,230	John Mayers	£11,654
Woods & Son	12,170	Jones & Son	11,600
Parker Bros.	11,947	W. W. Freeman, Chester*	11,600
Hamilton & Son	11,880		

CORK.—For additions to Myrtle Hill House, Cork. Mr. Arthur Hill, architect, Cork :—

T. A. O'Connell	£1,577	D. Hegarty	£1,300
E. & P. O'Flynn	1,412	Delany & Co.	1,100
S. Hill	1,350		

EASTBOURNE.—For addition to "The Crown" public-house, for Messrs. Page & Overton, Limited. Mr. A. Broad, architect, 22, George-street, Croydon. Quantities by the architect :—

J. Holland	£425 0	Wood & Son	£323 0
J. Peerless	358 0	G. Gausden	309 0
Peerless-Dennis & Co.	357 0	M. Hookham*	297 15

HAMPTON.—For the execution of works at drill hall, for the Trustees of the Parochial Charities. Mr. F. G. Hughes, surveyor, Hampton-on-Thames :—

Redgrove & Hopley	£115 0 0	J. Wright	£109 0
W. Evans	112 11 3	J. Tagg, Hampton Hill*	108 10
H. March	109 18 0	W. Highmore‡	46 0

‡ Since withdrawn.

HANDSWORTH (Staffs.).—For the erection of new Fire Brigade station, &c., for the Urban District Council. Mr. E. Kenworthy, Surveyor to the Council :—

George Webb, Handsworth* £2,026

HERNE BAY.—For erecting eleven villa residences in Albany-drive. Mr. J. Huxtable, architect, 6, Clarence-road, Sea-street, Herne Bay :—

Marchant & Hirst	£5,520	West & Piggott	£4,685
C. W. Welby	4,997		

KINGSTON-ON-THAMES.—For erecting a female infirmary and new mortuary at the workhouse, Kingston-on-Thames. Mr. W. B. Hope, architect and surveyor :—

Whitehead & Co., Limited	£30,680 0 0
Gough and Co.	29,156 0 0
B. E. Nightingale	28,755 0 0
Turtle & Appleton	27,350 0 0
C. J. Saunders	27,000 0 0
Goddard & Sons	26,070 0 0
Martin Wells & Co.	25,866 0 0
Pattinson & Sons	25,863 0 0
Stephens, Bastow, & Co., Limited	25,793 0 0
Merredew & Wort	24,900 0 0
Shelbourne & Co.	23,950 14 7

LONDON.—For rebuilding nine houses with shops and workshops, Sidney-street, Whitechapel, E., for Mr. Charles Martin. Mr. E. H. Abbott, architect, 6, Warwick-court, Holborn, W.C. Quantities by Mr. A. Johnson, Imperial-buildings, Ludgate-circus, E.C. :—

A. Fordham	£6,990	Balaam Bros.	£5,700
S. Salt	6,938	A. E. Symes	5,686
Wells & Son	6,517	Thos. Grant	5,500
Wall & Co.	5,811	R. & E. Evans	5,498

LONDON.—For work required to be executed at Woodberry Down Chapel, Seven Sisters'-road, N. Messrs. W. Bradbear & Co., architects and surveyors, Canonbury Station, N. :—

	General Estimate.	External Pointing.	Total.
Crowe	£1,304 0	£495 0 0	£1,799 0 0
Pearse	970 0	130 0 0	1,100 0 0
Campbell, Smith, & Co.	684 0	379 0 0	1,063 0 0
Richards	691 0	356 0 0	1,047 0 0
Simpson & Cove	762 0	267 0 0	1,029 0 0
Wilson	660 10	300 0 0	960 10 0
Stapleton	705 0	237 0 0	942 0 0
Buckeridge	649 0	246 0 0	895 0 0
Groves	517 0	319 0 0	836 0 0
Holliday & Greenwood	565 0	260 0 0	825 0 0
Britton	650 0	160 0 0	810 0 0
Bradford	548 0	240 0 0	788 0 0
Kelsey	363 14	302 5 6	665 19 6
Woolaston	549 12	—	—
Stewart	494 0	54 15 0	548 15 0
Dudley	305 0	125 0 0	430 0 0

LONDON.—For new billiard-room at the "Adam and Eve," Peckham. Mr. J. Warne, architect, Peckham :—

Simpson & Cove	£875	Coates	£776
Tyreman	857	Eames	760
Hammond	777		

LONDON.—For the erection of premises in Johnson's-court, Fleet-street, for Mr. R. S. Cartwright :—

J. Marsland	£9,965	Rider & Son	£9,810
Howell J. Williams	9,876	Turtle & Appleton	9,164
Hornsey	9,875	Newton & Sons	9,071
Dove Bros.	9,845	Burman & Sons	8,965

LONDON.—For additions to "Springcroft," Hornsey-lane, N. Mr. Alfred Conder, architect, Palace Chambers, 9, Bridge-street, Westminster :—

E. Toms	£1,142	Akers & Co.*	£911
Grover & Son	1,096		

LONDON.—For erecting boundary railings and walls, together with the corrugated iron shelters, &c., at the Market-road public garden and recreation ground, for the Islington Vestry. Mr. J. Patten Barber, Chief Surveyor:—

Weibking & Sons* £758

[Lowest tender of five.

LONDON.—For alterations and shop front, at 153, Hoxton-street, N., for Mr. P. Cohen :—

W. Irwin	£495	Whity Bros.	£460
A. & T. Wilson	483	Weibking & Sons*	375
T. Wilmot	480		

LONDON.—For pulling down and erecting small new factory at 78, Grange-street, N., for Mr. John Salmon. Messrs. Geo. Pearce & Sons, surveyors, 22, Hyde-road, N. :—

Weibking & Sons* £400

LONDONDERRY.—For alterations to premises, for Messrs. Geo. Austin & Co., Ferryquay-st. and Diamond, Londonderry. Messrs. Forman & Aston, architects, Castle-street, Londonderry :—

Young & Dickson	£2,498	McKee & Son, Dungannon*	£2,000
J. & W. Stewart	2,375		
Robert Colhoun	2,200		

LONDONDERRY.—For additions to Ebrington Factory, for Messrs. Young & Rochester. Mr. D. Conroy, architect, 2, Bishop-street, Londonderry. Quantities by Mr. J. Ferguson, Londonderry :—

D. McCaffrey	£2,600 12	R. Colhoun, Strand-road, Londonderry*	£2,300
McKee & Sons	2,350 0		

OXFORD.—For proposed additions to St. John's College, Oxford. Mr. E. P. Warren, architect, Westminster, S.W. Quantities by Mr. J. B. Lofting, Westminster, S.W. :—

Thompson & Co.	£7,330	Simpson & Co.	£6,117
Stephens, Bastow, & Co., Limited	6,698	Holloway Bros.	6,098
Parnell & Sons	6,456	Sim & Co.	5,977
		Bensfield & Loxley	5,910

REDHILL.—For erecting stabling, &c., Hooley Park Estate, for Messrs. Rickett, Smith, & Co., Limited. Mr. A. Broad, architect, 22, George-street, Croydon. Quantities by the architect :—

Smith & Sons	£1,108	Bagaley & Sons	£947
E. J. Saunders	1,047	Buckland & Waters	942
T. Bushby	1,015	W. F. Wilkinson	930
D. W. Barker	1,014	Akers & Co.	929
J. J. Carrick	995	Nightingale & Sons*	859
Pearson & Co.	980		

RUABON.—For the erection of school and residence, Johnstown, for the Ruabon (U.D.) School Board. Messrs. J. Morison & Son, architects, King-street, Wrexham. Quantities by the architects :—

J. Gethin	£3,913 0	Jenkins & Jones, Johnstown, nr. Ruabon*	£3,795 0
Davies Bros.	3,884 15		
J. T. Jones	3,862 0		

ST. MARY CRAY.—For erecting four cottages in the High-street. Mr. W. A. Williams, architect, 48, Cornhill, E.C. :—

J. Lonsdale* £920

SOLIHULL.—For the erection of infirmary and tramp wards, for the Union Guardians. Mr. W. H. Ward, architect, Paradise-street, Birmingham. Quantities by Mr. W. H. Elsmore, 9, Carteret-street, Westminster :—

William Hopkins	£13,400	R. Merton Hughes	£11,821
Whittall & Son	13,379	Giles & Son	11,790
Richard Fenwick	12,600	J. Atkinson	11,750
H. J. Briley	12,500	Willcock & Co.	11,680
Whitehouse & Sons	12,387	W. Robinson	11,150
Bragg Bros.	11,950	T. & W. Thompson, Solihull*	10,700
Smith & Pitts	11,943		

SOOTHILL (Yorks).—For the erection of six houses, off Broom-street, for Mr. Allan Blackburn, architect, Talbot-street, Batley :—

Masonry.—T. Mortimer, Carlinghow, Batley*	£664 0
Joinery.—G. Elliott, Hanging Heaton, Dewsbury*	240 0
Plastering.—S. Crawshaw, Field-lane, Batley*	73 0
Plumbing.—T. Elliott, Station-road, Batley*	56 10
Slating.—W. H. Thompson, Bradford-road, Batley*	66 10

SOUTHEND-ON-SEA.—For proposed house, Victoria-avenue, Southend-on-Sea, for Mr. S. Parrish. Messrs. Thompson & Greenhalgh, architects, Southend-on-Sea :—

A. E. Symes	£1,520	Shelbourne & Co.	£1,422
F. Dupont	1,490	F. E. Woodhams	1,392
Stewart & Co.	1,485	Davis & Leaney*	1,328

SOUTH SHIELDS.—For alterations to business premises, for Messrs. Redmayne & Walker, Ocean-road, South Shields. Mr. Henry Grieves, architect, Albany Chambers, South Shields :—

W. J. Robertson	£263 7 1
A. Ross	255 0 0
S. Sheriff	220 0 0
M. Hall, jun., South Shields*	210 0 0
Marble Work.	
J. Angove, Newcastle*	74 10 0
Tilers' Work.	
Walker & Son, Newcastle*	47 18 6

LONDON SCHOOL BOARD TENDERS.

AT the last meeting of the London School Board, the Works Committee submitted the following lists of tenders. Mr. T. J. Bailey is the Board's architect :—

The work at the following Schools will be executed between June 3, 1899, and July 1, 1899 :—

Exterior Painting.

BATH-STREET :—

W. Bunce	£550 0 0	McCormick & Sons	£247 0 0
F. Britton	307 17 7	Johnson & Co.	190 0 0
Lawrance & Sons	269 0 0	Bristow & Eatwell*	151 0 0
L. H. & R. Roberts	260 0 0		
Wagstaff & Sons	259 0 0		

[See also next page.

BRITISH-STREET :—

W. Hornett	£160 0	Unsigned	£138 5
J. T. Roby	145 5	E. Triggs	136 0
J. Kybett	142 0	G. Wales*	129 0

GLOUCESTER-ROAD :—

C. Gurling	£405	W. Hammond	£300
H. Line	331	G. Kemp	290
Garrett & Son	328	Holliday & Greenwood	239
J. & C. Bowyer	322	Morgan & Co.*	213

HANBURY-STREET :—

Wall & Co.	£62 10	J. Haydon	£50 5
Collis Willmott	60 0	A. W. Derby*	49 0
G. Barker	56 0		

LONDON FIELDS :—

F. Britton	£324 4 4	Collis Willmott	£160 0 0
Lawrance & Sons	259 0 0	G. Wales	152 12 6
Barrett & Power	177 0 0	Silk & Son	149 0 0
W. Shurmur	169 0 0	J. Haydon*	125 8 6

LUCAS-STREET :—

Martin, Wells, & Co.	£221 10 0	White & Co.	£145 0 0
S. Musgrove	168 15 0	E. Proctor	135 0 0
W. Banks	149 15 6	C. G. Jones	127 0 0
		C. S. Jones*	110 0 0

MALMESBURY-ROAD :—

A. E. Symes	£215	A. W. Derby	£125
J. T. Robey	152	S. H. Corfield*	109
Unsigned	133		

MANCHESTER-STREET :—

Willmott & Sons	£279 0	W. Brown	£152 3
R. S. Buckeridge	240 0	Spencer, Santo, & Co., Ltd.	152 0
T. Cruwys	212 10	T. Nicholson	140 0
Stevens Bros.	168 0	W. Chappell*	140 0
W. Hornett	155 0		

PLOUGH-ROAD :—

C. Gurling	£227 0 0	Parsons & Co.	£148 10 0
R. S. Ronald	191 0 0	O. Craske	140 0 0
Bulled & Co.	170 0 0	Heinemann & Co.	131 14 0
Johnson & Co., Ltd.	165 0 0	F. Chidley	130 0 0
Gregory & Co.	153 16 0	E. B. Tucker*	128 9 6

POCOCK-STREET :—

T. L. Green	£197	Holliday & Greenwood	£153
Somerford & Son	161	E. Triggs	142
Edwards & Medway	160	E. Flood	136
Lathey Bros.	156	Maxwell Bros., Ltd.*	122
B. E. Nightingale	154		

PORTMAN-PLACE :—

A. E. Symes	£180	J. Kybett	£127
J. T. Robey	188	S. H. Corfield	109
A. W. Derby	135	G. Barker*	103

POWIS-STREET :—

Martin, Wells, & Co.	£191 15 0	C. Foreman	£124 0 0
Thomas & Edge	132 0 0	J. H. Hodgin	124 0 0
W. Banks	124 19 6	E. Proctor*	80 0 0

RUBY-STREET :—

W. Hammond	£290	Rice & Son	£179
H. & G. Mallett	200	G. Kemp	175
Garrett & Son	197	Morgan & Co.*	134
H. Line	185		

RUTLAND-STREET :—

Unsigned	£181 0	G. Barker	£139 10
J. Kybett	168 0	A. W. Derby	128 0
Johnson & Co.	142 0	S. H. Corfield*	123 0

UNION-STREET :—

Martin, Wells, & Co.	£221 10 0	W. Banks	£148 14 6
J. H. Hodgin	156 0 0	C. Foreman	134 0 0
Thomas & Edge	150 0 0	E. Proctor*	120 0 0

WELLINGTON-STREET :—

Marchant & Hirst	£175	Silk & Son	£132
W. Shurmur	144	Gardner & Hazell*	87

WESTON-STREET :—

T. L. Green	£219	B. E. Nightingale	£166
Edwards & Medway	189	E. Triggs	155
White & Co.	179	E. B. Tucker*	149

The Surveyors' Districts Map
— OF THE —
County of London

(Supplement to the NEW YEAR'S NUMBER), can be
MOUNTED ON CLOTH,
If sent to the Publishing Office, at the following PREPAID rates, viz. :—

ON STRAINER (Varnished)	.. ..	5/-
ON ROLLERS do.	.. ..	3/6
FOLDED, in Case (Unvarnished)	.. ..	2/6

N.B.—A remittance MUST accompany every Map sent in for mounting.

The NEW YEAR'S NUMBER is OUT OF PRINT, but
REPRINTS OF THE MAP ARE NOW READY,
Price One Shilling,
which purchasers can have mounted at above-mentioned prices.

Office :—46, CATHERINE STREET, LONDON, W.C.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom, at the rate of 19s. per annum (52 numbers) PREPAID. To all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, &c., 26s. per annum. Remittances (payable to DOUGLAS FOURDRINIER) should be addressed to the publisher of "THE BUILDER," No. 46, Catherine-street, W.C.

SUBSCRIBERS in LONDON and the SUBURBS, by prepaying at the Publishing Office, 19s. per annum (52 numbers) or 4s. 9d. per quarter (13 numbers), can ensure receiving "The Builder," by *Friday Morning's Post.*

W. H. Lascelles & Co.,
121, BUNHILL ROW, LONDON, E.C.

Telephone No. 270.

HIGH-CLASS JOINERY,
LASCELLES' CONCRETE

Architects' Designs are carried out with the greatest care.

CONSERVATORIES,
GREENHOUSES,
WOODEN BUILDINGS,
Bank, Office, & Shop Fittings.
CHURCH BENCHES & PULPITS.

ESTIMATES GIVEN ON APPLICATION.

THE BATH STONE FIRMS, Ltd.
BATH.
FOR ALL THE PROVED KINDS OF
BATH STONE.
FLUATE, for Hardening, Waterproofing, and Preserving Building Materials.

HAM HILL STONE.
DOULTING STONE.
The Ham Hill and Doulting Stone Co.
(incorporating The Ham Hill Stone Co. and C. Trask & Son, The Doulting Stone Co.)
Chief Office :—Norton, Stoke-under-Ham, Somerset.
London Agent :—Mr. E. A. Williams, 16, Craven-street, Strand.

Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 42, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to the Forth Bridge Co. [ADVT.

SPRAGUE & CO.'S, Ltd.,
INK-PHOTO PROCESS,
4 & 5, East Harding-street,
Fetter-Lane, E.C. [ADVT.

QUANTITIES, &c., LITHOGRAPHED
accurately and with despatch.
METCHIM & SON { 8, PRINCES STREET, ST. GEORGE ST. WESTMINSTER
"QUANTITY SURVEYORS' DIARY AND TABLES."
For 1899, price 6d. post 7d. In leather 1/- Post 1/1 [ADVT.

Ernest Mathews & Co.
61, St. Mary Axe, E.C.
SLATES, SLABWORK,
Enamelled Slate,
Marble,
Permanent Green Slates.
WORKS:
Bow, London, E. and Aberllefenny, North Wales.
BRANCH HOUSE:
37, Victoria-street, Bristol.

PILKINGTON & CO
(ESTABLISHED 1838),
MONUMENT CHAMBERS,
KING WILLIAM STREET, LONDON, E.C.
Telephone No., 2751 Avenue
Registered Trade Mark,
Polonceau Asphalte.
PATENT ASPHALTE and FELT ROOFING.
ACID-RESISTING ASPHALTE.
WHITE SILICA PAVING
SEYSSEL ASPHALTE.

C. B. N. SNEWIN
MAHOGANY, WAINSCOT, WALNUT,
TEAK, VENEER, and TIMBER MERCHANT,
Nos. 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, & 17, BACK HILL, HATTON GARDEN, and 29, RAY STREET, FARRINGDON ROAD, E.C.
THE LARGEST STOCK OF ALL KINDS OF WOODS IN EVERY THICKNESS. DRY, AND FIT FOR IMMEDIATE USE.
Telephone, No. 274 Holborn. Tele. Address "SNEWIN: London."

SZERELMEY STONE LIQUID.
The result of experience and research extending over MORE THAN HALF-A-CENTURY!
THE ONLY RELIABLE REMEDY FOR DAMP WALLS AND STONE DECAY.
It WATERPROOFS and PRESERVES
BRICK, STONE, CEMENT, STUCCO, PLASTER,
And every description of Building Material.
IT HAS STOOD THE TEST OF TIME!
N. C. SZERELMEY & CO., Szerelmey Works, Rotherhithe New-rd., S.E.

PORTLAND CEMENT

ROMAN, MEDINA, PARIAN, KEENE'S, PLASTER and WHITING,

Manufactured by

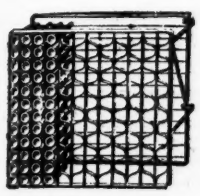
FRANCIS & COMPANY, LIMITED.

The Old Nine Elms Brand, Established 1810. Prize Medals—London, 1851; Philadelphia, 1876; Paris, 1878; Calcutta, 1883; London, 1884; Gold Medal, Paris Exhibition, 1889; Chicago, 1893. Offices: 4, Eastcheap, London, E.C. *Works: Cliffe-on-Thames.*—Tel. No. 132, Avenue.

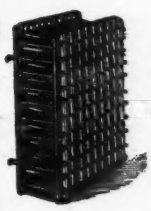
FARROW & JACKSON, LIMITED.

BY APPOINTMENT TO H.M. THE QUEEN AND H.R.H. THE PRINCE OF WALES.

MAKERS OF



IRON WINE BINS
OF ALL KINDS.
Registered Cellular, with separate rest for each bottle.
BURROW'S "SLIDER" BINS
NOW MANUFACTURED BY
FARROW & JACKSON,



CELLAR AND BAR REQUISITES.
BEER ENGINES AND PEWTERING WORK.
SPIRIT SERVICE AND PIPE, &c.
ESTIMATES FURNISHED,

16, GREAT TOWER STREET E.C., & 8, HAYMARKET, S.W.

VAL DE TRAVERS ASPHALTE

(COMPRESSED OR MASTIC)

Is the best material for Roadways, Footways, Damp Courses, Roofings, Warehouse Floors, Basements, Stables, Coach Houses, Slaughter Houses, Breweries, Lavatories, Tennis Courts, &c. *Full particulars can be obtained from the Offices,*

HAMILTON HOUSE, BISHOPSGATE STREET WITHOUT, E.C.

W. SUMNER & CO. LTD.

DIANA PLACE, 388, EUSTON ROAD, N.W.

HIGH CLASS STEAM JOINERY WORKS

THE TRADE SUPPLIED WITH FITTINGS FOR BANKS, OFFICES, CHURCHES, SHOPS, &c.

SAMUEL WRIGHT & CO.

Are in a position to execute FIBROUS PLASTERING of any quantity or description.

CROWN WORKS, ANDRÉ STREET, AMHURST ROAD, HACKNEY.

ORNAMENTAL CEILINGS AND CORNICES

GOLD MEDAL, PARIS, 1878.
JUROR, CLASS XXX., INTERNATIONAL EXHIBITION, 1862.
JUROR, CLASS XXVI., GREAT EXHIBITION, 1851.

IN PATENT FIBROUS PLASTER.
In slabs, dry, and ready for fixing.
George Jackson & Sons,
No. 49, RATHBONE PLACE, LONDON, W.
ESTABLISHED 1780.
All kinds of Enrichments supplied in the same material.

PRIZE MEDAL CLASS XV., EXPOSITION UNIVERSELLE, 1867
PRIZE MEDAL, CLASS X. (c), INTERNATIONAL EXHIBITION, 1862.
PRIZE MEDAL, CLASS XXIV., EXPOSITION UNIVERSELLE, 1855

HALL'S SANITARY WASHABLE DISTEMPER PATENTED

A New Sanitary Water Paint.

It is Cheaper, Healthier, and more Artistic than wall paper, and covers twice the surface of oil paint.

MANUFACTURED BY

SISSONS BROS. & Co., Ltd., HULL.

Samples, Shade Cards, and other particulars on application.

SPECIAL ADVANTAGES TO PRIVATE INSURERS.

THE IMPERIAL Insurance Company, Limited. FIRE. (Est. 1803), 1, Old Broad-street, E.C. and 22, Pall Mall, S.W.

Subscribed Capital, 1,200,000*l.* Paid-up, 300,000*l.* Total Funds, over 1,500,000*l.*—E. COZENS SMITH, General Manager.

THE VULCAN BOILER AND GENERAL INSURANCE CO., LIMITED.

(Late The Boiler Insurance and Steam Power Co., Lim. The Original Boiler Insurance Company.)

Head Office: 67, King Street, Manchester.

ESTABLISHED 1859.

Subscribed Capital - - £375,000.

Boilers and Engines Insured and Inspected.

Rates quoted to meet the

WORKMEN'S COMPENSATION ACT,

Employer's Liability Act, and Common Law.

Individual Accident Insurance.

Upwards of 40,000 Boilers & Engines under supervision.

J. F. L. CROSLAND, M.Inst.C.E., M.Inst.M.E., Chief Engineer.

EDWARD HADFIELD, Secretary.

Application for Agencies Invited.

"The Builder" Student's Series.

Crown 8vo, 3s. 6d. post free.

SPECIFICATIONS FOR BUILDING WORKS, AND HOW TO WRITE THEM: a Manual for Architectural Students. By FREDERIC RICHARD FARROW, F.R.I.B.A.

The Chapter on Terra-Cotta by THOS. COOPER, A.R.I.B.A. and that on Electric Wiring, by ALEX. RUSSELL, M.A. (Cantab.), Lecturer to Faraday House, and NEVILLE T. PAYNE, A.I.E.E.

This Manual is written with a view to meet the requirements of the student, to show him how he should write a specification, so that when he has learnt the method and general principles, he may apply them to the particular exigencies of any building he may design.

"Every architect who takes pupils should insist that they obtain copies."—*Architect.*

"Will prove of service to the architectural student."—*Building News.*

"Full of practical hints and advice—has a good index."—*A. A. Notes.*

"Well fulfils a useful purpose."—*Glasgow Herald.*

"A handy manual—will be found extremely useful in the early days of student life."—*Liverpool Courier.*

Uniform with the above, 5s. post free.

CARPENTRY AND JOINERY: a Text-Book for Architects, Engineers, Surveyors, and Craftsmen (with over 420 illustrations), by BANISTER F. FLETCHER, A.R.I.B.A. and H. PHILLIPS FLETCHER, A.R.I.B.A., A.M.I.C.E.

The Authors have endeavoured to meet the requirements of the craftsman, and at the same time to produce a work that will be useful to the Professional man in the designing of the various structures. They have also endeavoured to consider the desires of those who are likely to become candidates for the examination of the City and Guilds Institute, the Carpenters' Company, and the Institute of Certified Carpenters, &c. Also for the examination in these subjects by the R.I.B.A. and the Surveyors' Institution, &c.

"Can be heartily recommended."—*A. A. Notes.*

"A concise treatise."—*Scientific American.*

"Admirably adapted for its intended purpose."—*Carpenter and Builder.*

"A very useful volume."—*English Mechanic.*

"Thoroughly practical and up-to-date."—*Irish Builder.*

"Of the utmost value to the student."—*City Press.*

London

D. FOURDRINIER, "Builder" Office, 46, Catherine-street, W.C.

BUSINESSES WANTED & FOR SALE.

BUILDER and CONTRACTOR'S BUSINESS WANTED in Birmingham, or district, suitable for two partners; sound going concern that would bear strict investigation. Principals only.—Full particulars, Box 115, Office of "The Builder."

BUILDER and DECORATOR'S JOBBING BUSINESS FOR DISPOSAL, West End. Good profits, outlay small. The concern is very easily worked, and most suitable for a person with small capital. Advertiser is reluctantly compelled to give up. Price 250*l.*—Box 108, Office of "The Builder."

RED BRICKWORKS FOR SALE. Bricks going out as fast as made. Good opening for an energetic man, with capital, to acquire a going concern.—Box 105, Office of "The Builder."

Refer also to "TOO LATE" *column page* xx.

SURVEYORS' INSTITUTION EXAMINATIONS.—Complete courses of preparation in class or by correspondence in all divisions and sub-divisions. The Nine Months' Course for the Fellowship Examination will commence on the 8th June and for the Professional Associateship on the 9th June. At the last five examinations the following prizes were obtained by Mr. PARRY'S pupils:—1895 and 1896: Institution Prize, Driver Prize, and Penfold Silver Medal; 1897: Institution Prize and Special Prize; 1898: Institution Prize, Special Prize, Driver Prize, Penfold Silver Medal, and Crawter Prize (one of the two bracketted winners of the last); 1899: Institution Prize, Special Prize, Driver Prize, Penfold Silver Medal, and Penfold Gold Medal (all the prizes but one). MORE THAN HALF of the successful list were Mr. Parry's pupils.—Apply to Mr. RICHARD PARRY, F.S.I. A.M.I.C.E. &c. No. 27, Great George-street, Westminster (immediately opposite the Surveyors' Institution). Telephone 680, Westminster.

BILLS OF QUANTITIES, &c.

LITHOGRAPHED CORRECTLY BY RETURN OF POST. A LIBERAL DISCOUNT OFF USUAL PRICES. PLANS BEST STYLE.

ALLDAY, LIMITED.

Shakespeare Press, Birmingham.

SANITARY INSPECTORS' and PRACTICAL SANITARY SCIENCE EXAMS. of THE SANITARY INSTITUTE. Complete Courses of Instruction by correspondence for these and similar exams. conducted by Gentleman (Engineer, Surveyor, and Sanitary Inspector to Urban District Council) holding three Certificates from San. Inst. 1st Class Honours Medallist, Hygiene, &c. Several hundred successes. Classes for 1899 EXAMS. just commencing.—Apply early for Syllabus of Subjects, &c. to MEM. SAN. INST. Box 195, Office of "The Builder."

SANITARY INSTITUTE EXAMS.—Preparation for the Inspectors' Examination under a system of correspondence needing no Text Books or Acts, by C. H. CLARKE, Assoc.San.Inst. Member of the Société Française d'Hygiène. 1st Honourman and Medallist in Hygiene, Member of the Society of Arts, Professional Lecturer on Sanitation. Clarke's methodical and reliable "Aids":—"Notes on Sanitary Law," 1s. 6d. "Sanitary Appliances" (diagrams), 1s. "Trade Nuisances," 6d. "Practical Drain Inspection," 6d. "Calculation of Cubic Space," 1s. —Prospectus from 120, Thorold-road, Ilford, E.

R.I.B.A. EXAMS.—PREPARATION personally or by correspondence, in three, six, nine, or twelve months' courses. ARCHITECTURAL LENDING LIBRARY. Special three months' finishing courses.—For full particulars apply to Messrs. HOWGATE & BOND, Associates R.I.B.A. Perchard House, 70, Gower-street, W.C. (close to the British Museum).

R.I.B.A. SOCIETY of ARCHITECTS, and CIVIL SERVICE TECHNICAL EXAMINATIONS.—PREPARATION by correspondence, personally, or in residence. Seventeen first places. Articled pupils and improvers can also be taken, premiums being required.—MIDDLETON & CARDEN, 19, Craven-street, W.C.

MUNICIPAL and COUNTY ENGINEERS' EXAMINATION.—Mr. RICHARD PARRY, A.M.I.C.E. F.S.I. &c. 27, Great George-street, Westminster, prepares pupils by correspondence for this examination. The course of work may be taken to extend over three, six, or twelve months according to previous knowledge. At the examination of last April out of the 15 successful candidates 12 were prepared by Mr. Parry.

YOUNG ARCHITECT (A.R.I.B.A.) ASSISTS in the PREPARATION of DRAWINGS, TRACINGS, &c. at his own office.

G. SCORER,
No. 28, Newman-street, W.

TO ARCHITECTS, BOROUGH SURVEYORS, &c. — Quantities expeditiously prepared (from unfinished drawings if urgent) by qualified Surveyor, in good London style. Special terms arranged. Specifications written. — Address, G. H. I. 26, Bernard-street, Russell-square, London, W.C.

TO ARCHITECTS. — An experienced QUANTITY SURVEYOR is desirous of meeting with an ARCHITECT who would be able to INTRODUCE BUSINESS upon MUTUAL TERMS.—Address, Box 123, Office of "The Builder."

STATIONERY and ACCOUNT BOOKS FOR ALL CLASSES. Best for ARCHITECTS. Best for SURVEYORS. Best for BUILDERS. Best House for Tracing Papers, Tracing Linen, and Drawing Papers. The "Bedford Row" Tracing Cloth. Special Value. Send for Sample and Price Lists.—F. CORSE, Bedford-row Stationery Warehouse, Theobald's-road, London.

JUNIOR PARTNER WANTED in an old-established and large general practice in the provinces. Exceptional opportunity for a gentleman of ability and energy.—Box 214, Office of "The Builder."

CIVIL ENGINEER and ARCHITECT (F.R.I.B.A.), with twenty-two years' service with the Government of India, and holding Certificate of Competency to act as District Surveyor in London, desires ENGAGEMENT, or would join firm of civil engineers or architects, with a view to partnership. Varied experience. First-class testimonials.—Address, F.R.I.B.A. care of Messrs. Grindlay & Co. 54, Parliament-street.

JUNIOR PARTNERSHIP.—A.R.I.B.A. (30) with good practical experience in town and country desires to PURCHASE a WORKING PARTNERSHIP in an architectural practice. London preferred.—Box 112, Office of "The Builder."

OFFICE TO BE LET. Central position, City. Splendid light. One room, with use of large assistants' room if required. Suitable for architect starting practice. Cheap.—S. T. care of Street and Co. 30, Cornhill, E.C.

BECKENHAM URBAN DISTRICT COUNCIL.

TECHNICAL INSTITUTE, SWIMMING BATHS, AND ELECTRIC LIGHT STATION.

APPOINTMENT OF TWO CLERKS OF WORKS.

The Beckenham Urban District Council invite APPLICATION for the Offices of CLERK of WORKS, in connection with the Erection of

(1). A Technical Institute and Public Swimming Baths and

(2). An Electic Light Station.

The respective salaries will be as follows:—

For the Technical Institute and Baths Four Guineas, and for the Electric Light Station Three and a Half Guineas per week, the appointment in either case being terminable on one month's notice.

Applications, stating age and qualifications, accompanied by three recent testimonials, to be enclosed in an envelope endorsed "Clerk of Works," and addressed to Mr. J. A. ANGELL, the Council's Engineer and Surveyor (under whose direction the persons appointed will be required to act), and delivered not later than MONDAY, JUN 19th, 1899.

By order,
F. STEVENS,
Clerk of the Coun il.

May 29th, 1899.

TEMPORARY ASSISTANCE.

The Llandudno Urban District Council require the SERVICES of a TEMPORARY ASSISTANT to their Engineer and Surveyor.

His duties will consist in taking levels and preparing plans for works of private street improvement, and preference will be given to one having had experience in this branch of work.

Applications, stating age, and accompanied by copies of not more than two recent testimonials, endorsed "Temporary Assistant," must be received by the undersigned not later than MONDAY, the 12th day of JUNE, 1899.

The period of appointment will probably be for six months, and the salary offered is two guineas per week.

E. PALEY STEPHENSON, Assoc.M.Inst.C.E.
Engineer to the Council.

Church Works,
May 30th, 1899.

QUANTITY SURVEYOR WANTED, competent to measure extras and omissions and adjust accounts.—Give full particulars as to age, experience, and salary required, VALLANCE & WESTWICK, Architects and Surveyors, Mansfield.

ESSEX COUNTY COUNCIL.

ASSISTANT TO THE CHIEF SURVEYOR.

APPLICATIONS are invited for the APPOINTMENT of JUNIOR ASSISTANT in the office of the Chief Surveyor to the County Council of Essex.

Applicants must have had previous experience in the office of a County Surveyor, and must be capable draughtsmen and well up in bridge details.

Commencing salary 75*l.* per annum.

Applications, in own handwriting, enclosing copies of not more than three recent testimonials, to be sent to the Chief Surveyor, County Offices, Chelmsford, not later than SATURDAY, the 17th inst.

PERCY J. SHELDON, Assoc M.Inst.C.E.
Chief Surveyor.

County Offices, Chelmsford,
June 1st, 1899.

WALTHAMSTOW SCHOOL BOARD. WANTED at once, an OFFICER to Superintend General Repairs, at a salary of 150*l.* per annum.

The person appointed must be a good draughtsman, competent to draw up reports, specifications, and able to conduct correspondence and keep the necessary accounts and minutes of the Works Committee.

Applications on forms to be obtained from the undersigned should be sent in on or before the 10th JUNE next.

T. W. LIDDIARD,
Clerk.

School Board Offices,
High-street, Walthamstow,
May 31st, 1899.

ASSISTANT REQUIRED (not under 25) for the Diocesan Technical School in Sierra Leone. Christian. Abstainer. One who has had practical experience in building construction or land surveying, in addition to ability to teach subjects underlying same.—Address, stating full particulars, to Box 264, Office of "The Builder."

ARCHITECTURAL ASSISTANT. WANTED a TEMPORARY ARCHITECTURAL ASSISTANT. Must be thoroughly competent to take out quantities, and to prepare detail drawings and specifications, for public buildings.

Applicants should state age, experience, and salary required, and give references.—COUNTY SURVEYOR, County Hall, Lewes, Sussex.

DRAUGHTSMAN WANTED, thoroughly experienced in preparing plans of shopfittings and fronts in perspective and to scale. Must be a good colourist and designer.—Apply, stating qualifications, salary required, and references, Box No. 232, Office of "The Builder."

ASSISTANTS (two) WANTED at once by a firm of Architects in the Midlands, one to be leading assistant.—State age, salary required, and references, to Box 283, Office of "The Builder."

ARCHITECTURAL ASSISTANT Wanted at once. Thoroughly competent.—State age, experience, and salary required, VALLANCE & WESTWICK, Architects and Surveyors, Mansfield.

ARCHITECTURAL ASSISTANT REQUIRED in a large Midland town. Experienced in construction and detail. Must be a quick and reliable draughtsman, and capable of taking a leading position. — Reply, with age, salary, qualifications, &c.—Box 291, Office of "The Builder."

ASSISTANCE WANTED in designing decorative tile work.—Address, No. 133, CASTLE, LAMB, & STORR, 133, Salisbury-square, Fleet-street, London, E.C.

CAPABLE MAN, experienced in designing and building portable structures, &c. WANTED for fitting department (structures) at works.—Apply by letter, STRUCTURES, care of Street Brothers, 5, Serle-street, W.C.

YOUNG MAN WANTED in an Estate Office, who has just served his time in Architect's Office. Must be capable of preparing plans and specifications for the erection of farm premises, stables, cottages, &c. Shorthand writer preferred. Good references.—Box 285, Office of "The Builder."

PUPIL.—Firm of Architects & Surveyors holding good appointments in south-coast town have VACANCY in office for PUPIL. Moderate premium.—Address, Box 282, Office of "The Builder."

AGENT, calling on Architects and Engineers, WANTED, to push a patent sanitary appliance.—Box 104, Office of "The Builder."

TRAVELLER (young) WANTED, with knowledge of Builders' Merchant's trade.—Apply, stating age, experience, and salary expected, to Box 244, Office of "The Builder."

WORKS MANAGER. — Energetic and experienced Man WANTED (aged about 40) to take the entire management of a steam joinery works. Must have held similar position and have good references.—Address, giving all particulars and salary required, to Box 286, Office of "The Builder."

BUILDER'S OUTSIDE MANAGER and ESTIMATING CLERK WANTED, about 40 miles from London. Must be well up in quantities and adjusting accounts. None but really energetic and capable men need apply. Copies of three testimonials required. — Apply Box 281, Office of "The Builder."

HEATING ENGINEER'S CLERK, aged 18 to 20, WANTED. Must have some experience in drawing and tracing.—Address, Box 107, Office of "The Builder."

BUILDER'S CLERK WANTED, well up in jobbing accounts.—Address to E. WIGLEY, 313, Railton-road, Herne Hill, S.E.

CLERK.—WANTED in a large Joinery Works in the country, a thoroughly competent PRIME COST CLERK.—Address, Box 280, Office of "The Builder."

BUILDER'S CLERK WANTED, with some practical experience of time-sheets, prime costing, and general office routine. Good references necessary. Age between 20 and 30. Salary from 20s. to 30s. Permanent position.—Write, COOPER & SON, Ltd. Builders and Decorators, Windsor.

BUILDER'S SECOND CLERK Wanted, London firm, to check accounts, abstract time and materials, and general routine.—Apply, stating age, wages, references, &c. to Box 297, Office of "The Builder."

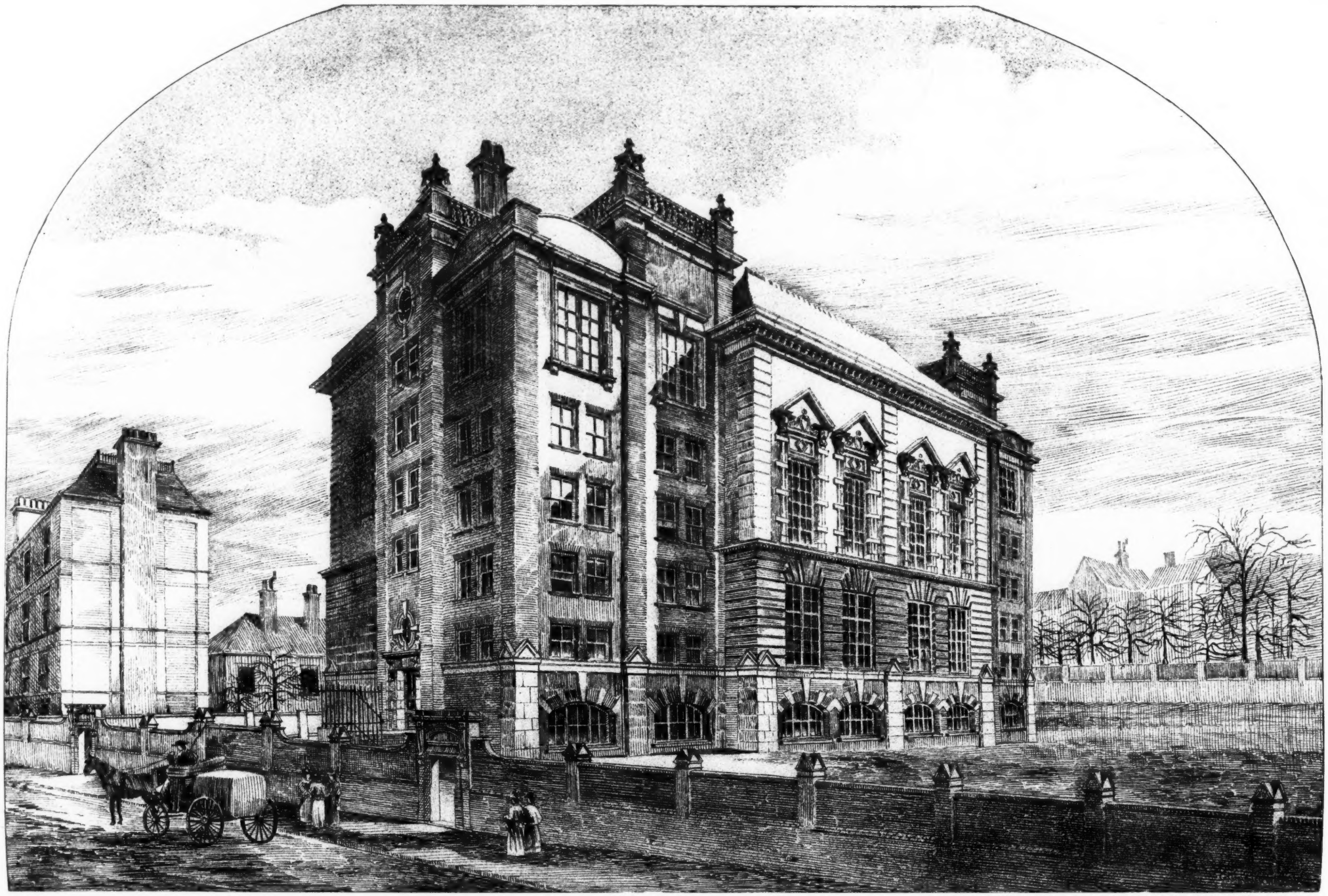
JUNIOR CLERK WANTED for a few months (aged 16 to 18 years) for Jobbing Builder's office to enter time and material, &c. Hours 8.3 to 6.—Apply by letter, with particulars, salary, &c. to W. J. S. 273, Clapham-road S.W.

Village Post Office. Broadway, Worcestershire.

E. Guy Dawber and Whitwell, Archts.

PHOTO-LITHO. SPRAGUE & Co Ltd 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

PHOTO-LITHO. SPRAGUE & Co. Ltd. 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.



INK-PHOTO SPRAGUE & C° L. 4 & 5 EAST HARDING STREET, FETTER LANE, E.C.

SCHOOL BOARD FOR LONDON: FINSBURY PUPIL TEACHERS' CENTRE, OFFORD ROAD, N.—MR T. J. BAILEY, F.R.I.B.A., ARCHITECT

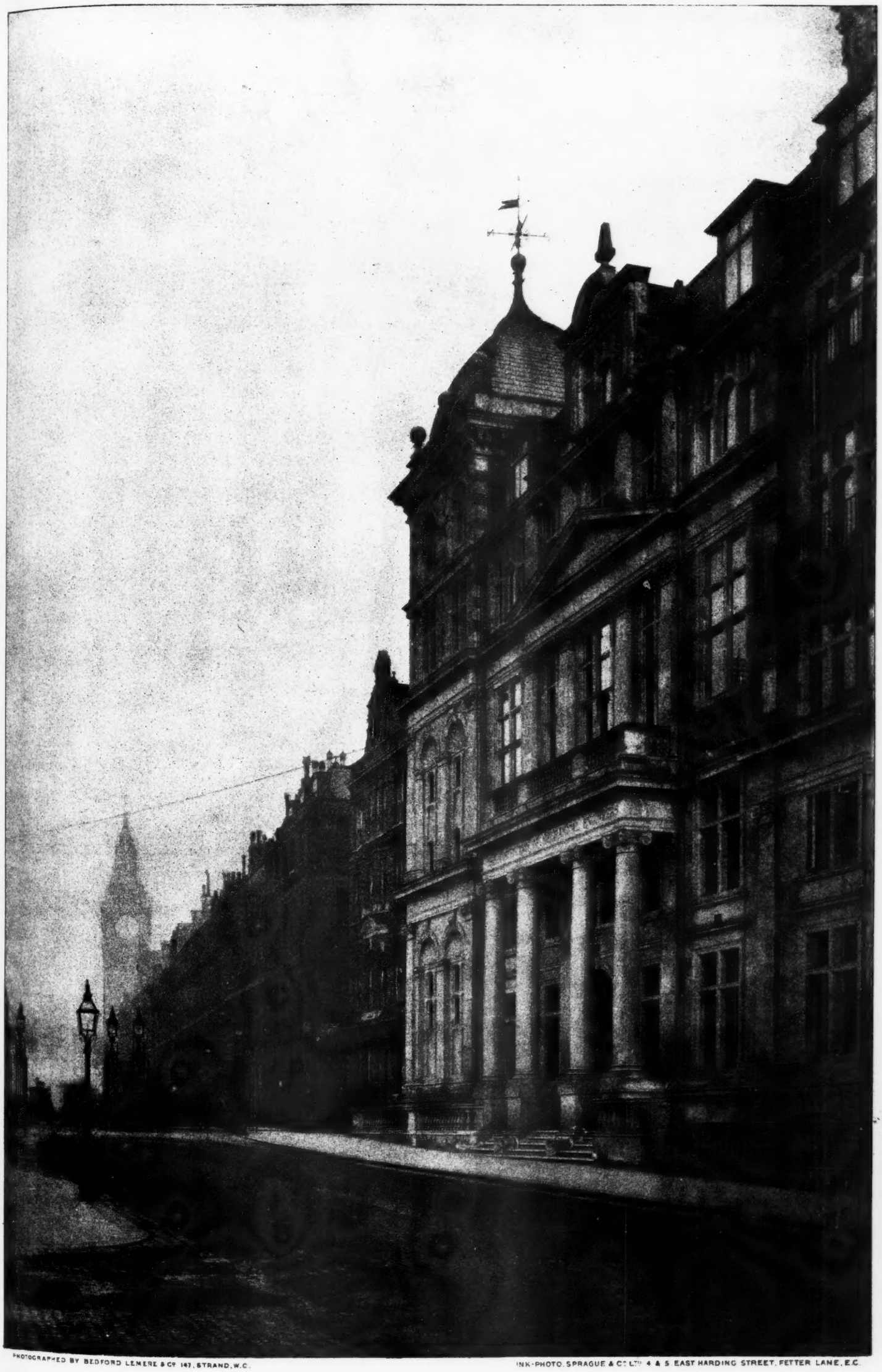
GENERAL LIBRARY,
UNIV. OF MICH.
JUN 14 1899

SCHOOL BOARD FOR LONDON: FINSBURY PUPIL TEACHERS' CENTRE, OFFORD ROAD, N.—MR T. J. BAILEY, F.R.I.B.A., ARCHITECT

PHOTOGRAPHED BY BEDFORD LEMERE & Co 147, STRAND, W.C. INK-PHOTO, SPRAGUE & Co LTD 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

INSTITUTION OF MECHANICAL ENGINEERS: THE LIBRARY.—MR BASIL SLADE, ARCHITECT

GENERAL LIBRARY,
UNIV. OF MICH.
JUN 14 1899

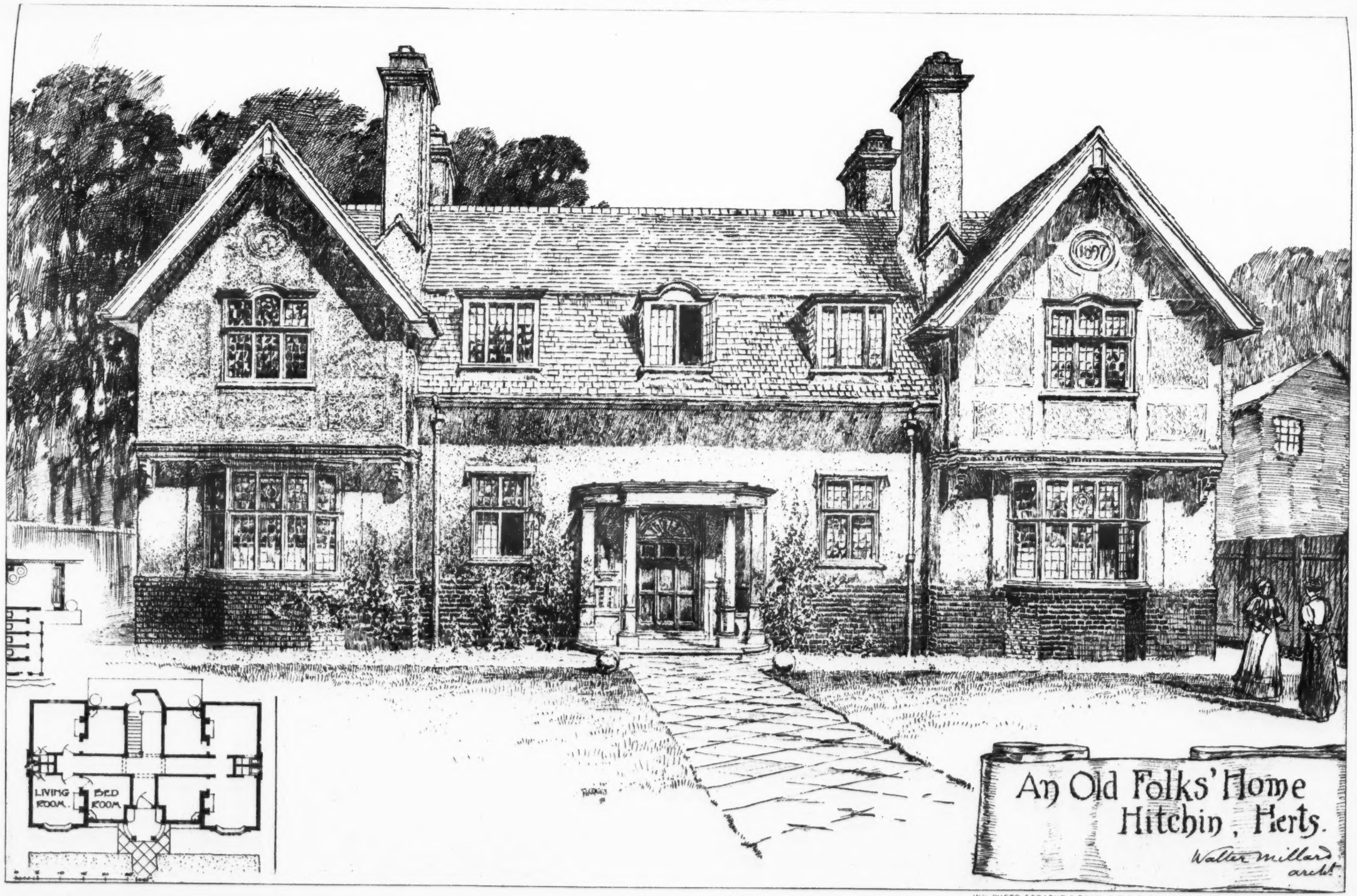


PHOTOGRAPHED BY BEDFORD LEMERE & Co 147, STRAND, W.C. INK-PHOTO. SPRAGUE & Co LTD 4 & 5 EAST HARDING STREET, FETTER LANE, E.C.

INSTITUTION OF MECHANICAL ENGINEERS.—Mr. Basil Slade, Architect

GENERAL LIBRARY,
UNIV. OF MICH.
JUN 14 1899

INSTITUTION OF MECHANICAL ENGINEERS: THE LIBRARY.—Mr Basil Slade, Architect
INK-PHOTO SPRAGUE & Co LTD 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.
PHOTOGRAPHED BY BEDFORD LEMERE & Co 147, STRAND, W.C.



An Old Folks' Home
Hitchin, Herts.
Walter Millard archt

INK-PHOTO SPRAGUE & C° L.D. 4 & 5 EAST HARDING STREET, FETTER LANE, E.C.

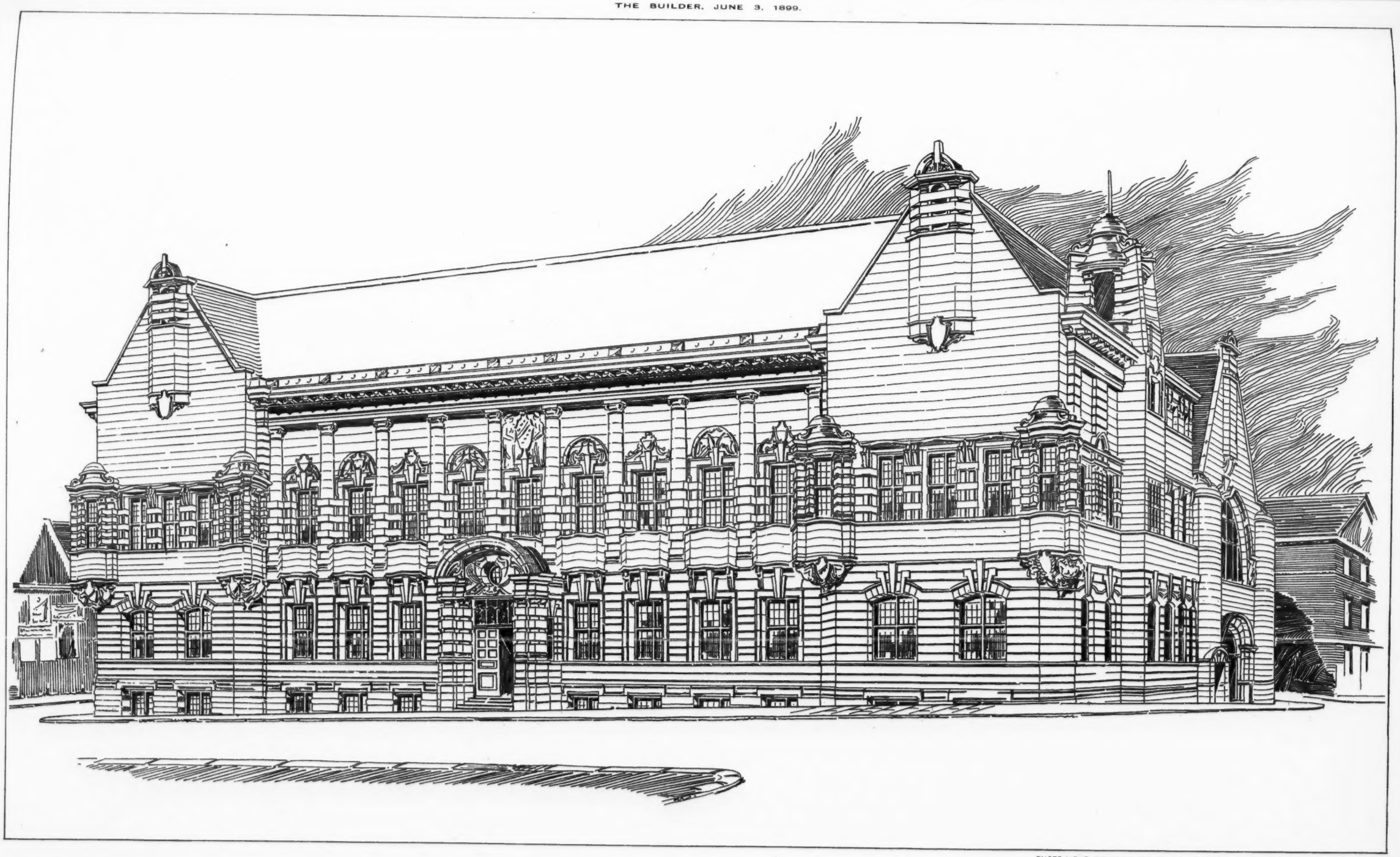


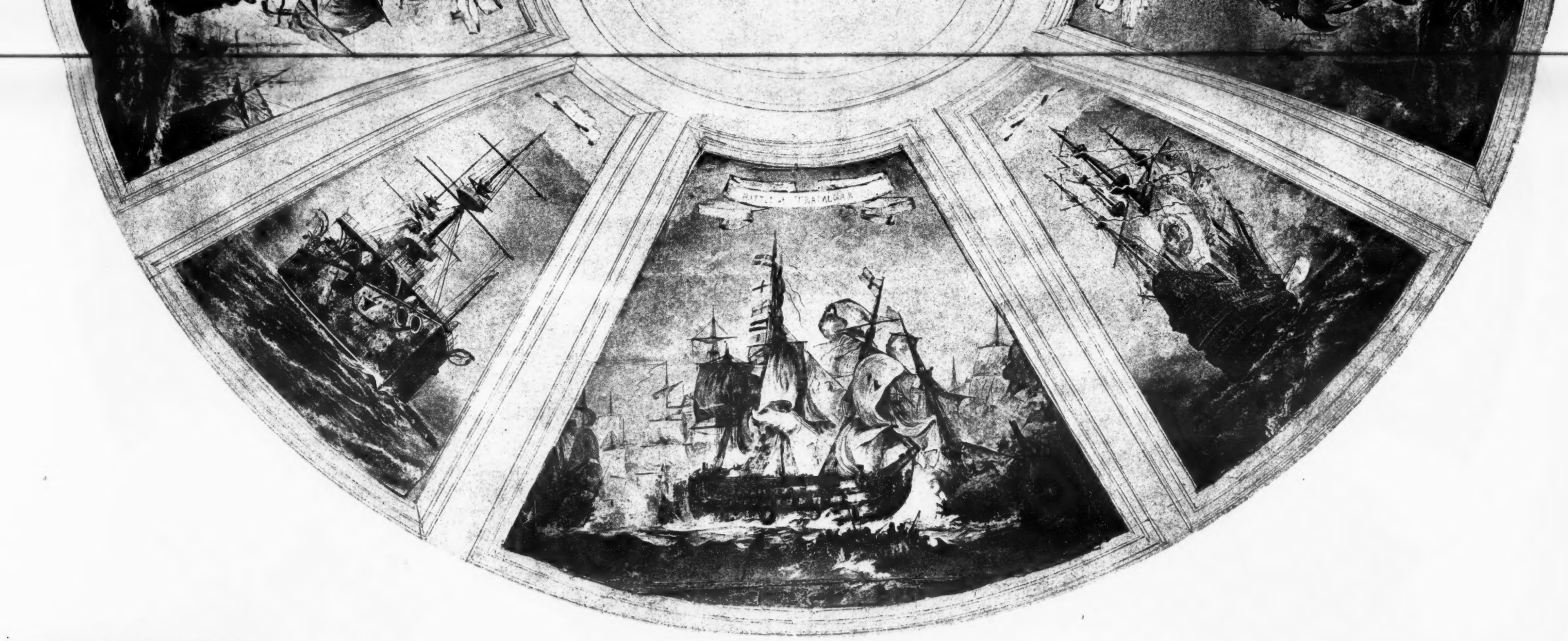
PHOTO-LITHO. SPRAGUE & Co LTD 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

SECOND PREMIATED DESIGN FOR ROYAL INSTITUTION, LIVERPOOL.—By Mr. R. W. Bedingfield, A.R.I.B.A

GENERAL LIBRARY,
UNIV. OF MICH.
JUN 14 1899

DECORATION OF CEILING AND PROSCENIUM. NEW PALACE THEATRE, PLYMOUTH.—BY MR H C BREWER

INK-PHOTO SPRAGUE & C° LT° 4 & 5 EAST HARDING STREET FETTER LANE E.C


BATTLE of TRAFALGAR